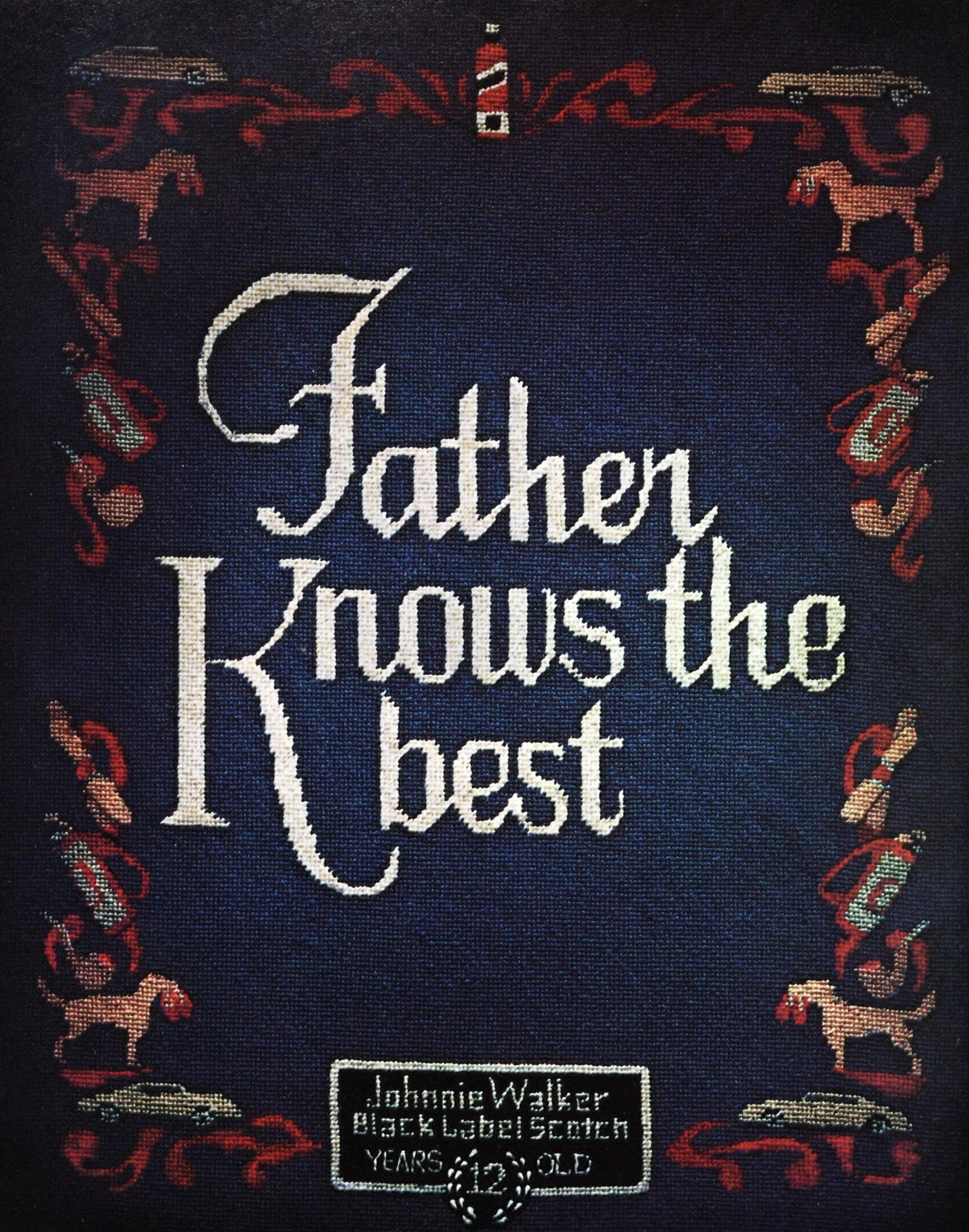
June 1974

Smithsonian

The Longhorn comes back and is a standard ranch breed (back cover and p. 44)



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"You have ruined my Volaille"

How Dione Lucas (of Cordon Bleu fame) came to create the most remarkable knife in the world. A knife you can now own.

Not an inexpensive knife.

I am told by my friends who pride their cooking, that this is just that—a remarkable knife that brings a new celebration to cooking. Its balance is such, its blade so acute, that with a small flick, you can pare fat from the shank of meat.

That, some remember, is exactly how gourmet great, Dione Lucas, came to create this remarkable knife.

Her recipe for Supreme de Volaille called for carefully removing all the fat from the tender meat.

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It is completely within the bounds of safety to say that once you own the Dione Lucas Gourmet Knife, you may never again have to purchase a knife for your kitchen.

In fact, that is the way we guarantee these remarkable knives. Should you ever need a replacement for any reason, simply return the knife, and a new knife will be sent to you, at no cost to you.

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I make no pretense of low price for this knife. It is not, by any means, the world's most inexpensive knife set. Yet when you consider it as a lifetime investment, its value takes real meaning.

A set of 4 of these knives is $14.98.

Were it to be sold for less, the very qualities that make this knife so supreme, would have to be lessened.

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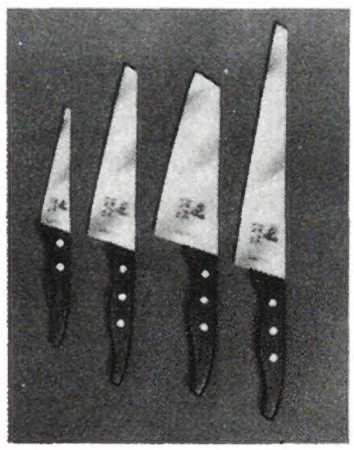
There are four knives in the set. One of 8½" for vegetable paring. One of 11½" for the wafer thin slicing of bread and such. One of 14¼" for the carving of roasts. And a cleaver of 11" for the separation of chickens and such.



Because this is such a unique ownership, I am including with each set of these knives, four recipes of Cordon Bleu teacher, Dione Lucas, where the use of her knives is quite critical to the outcome of the recipe. (Including her recipe for Supreme de Volaille.)

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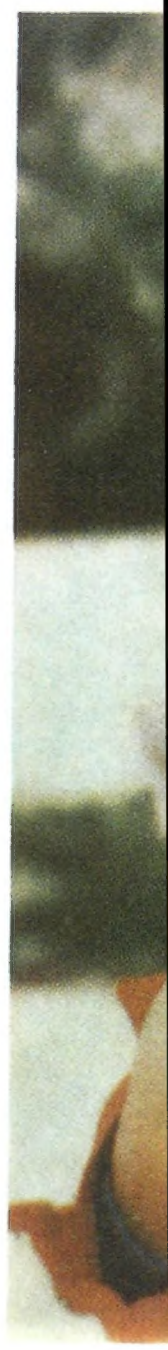

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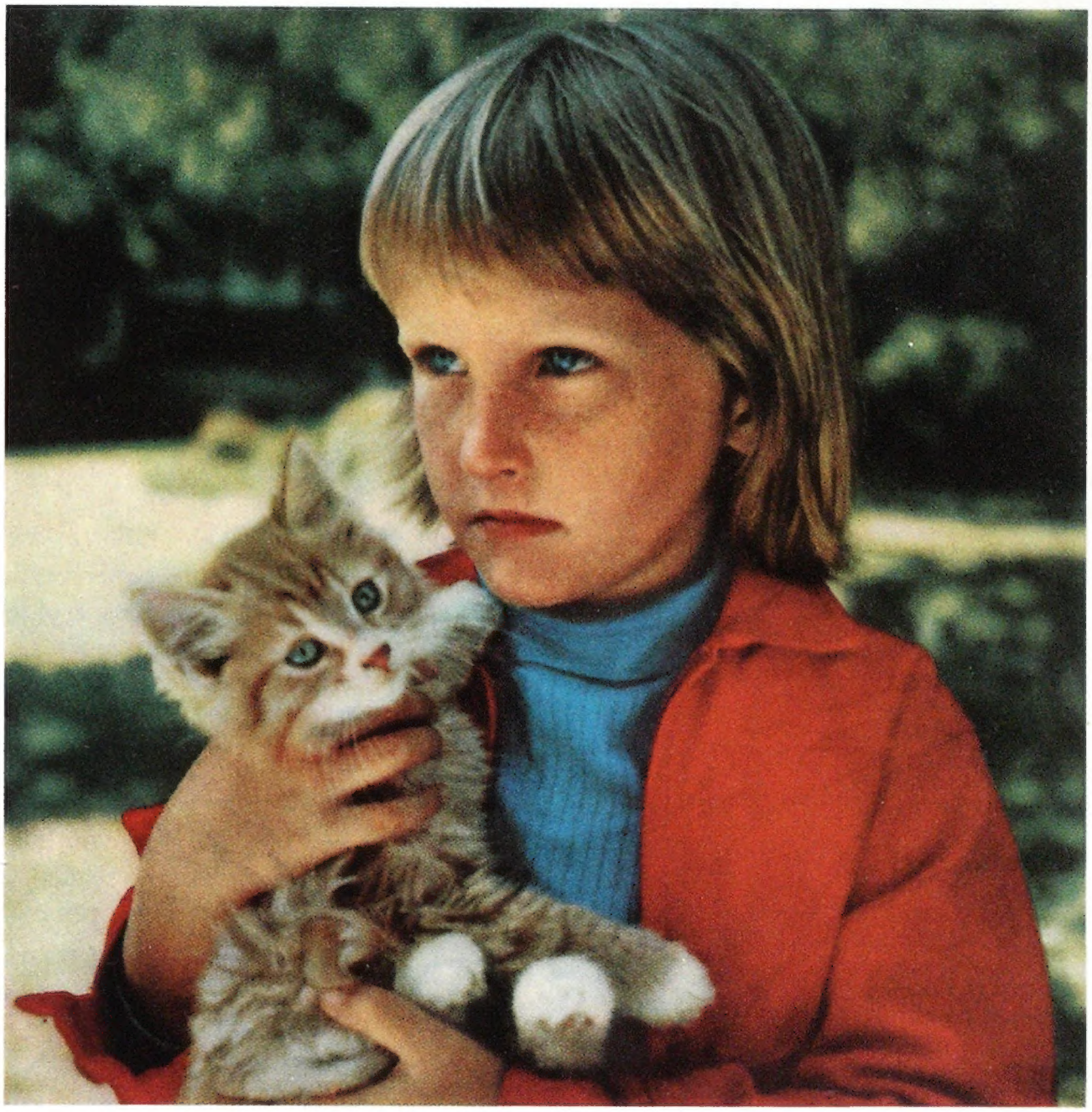

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Smithsonian

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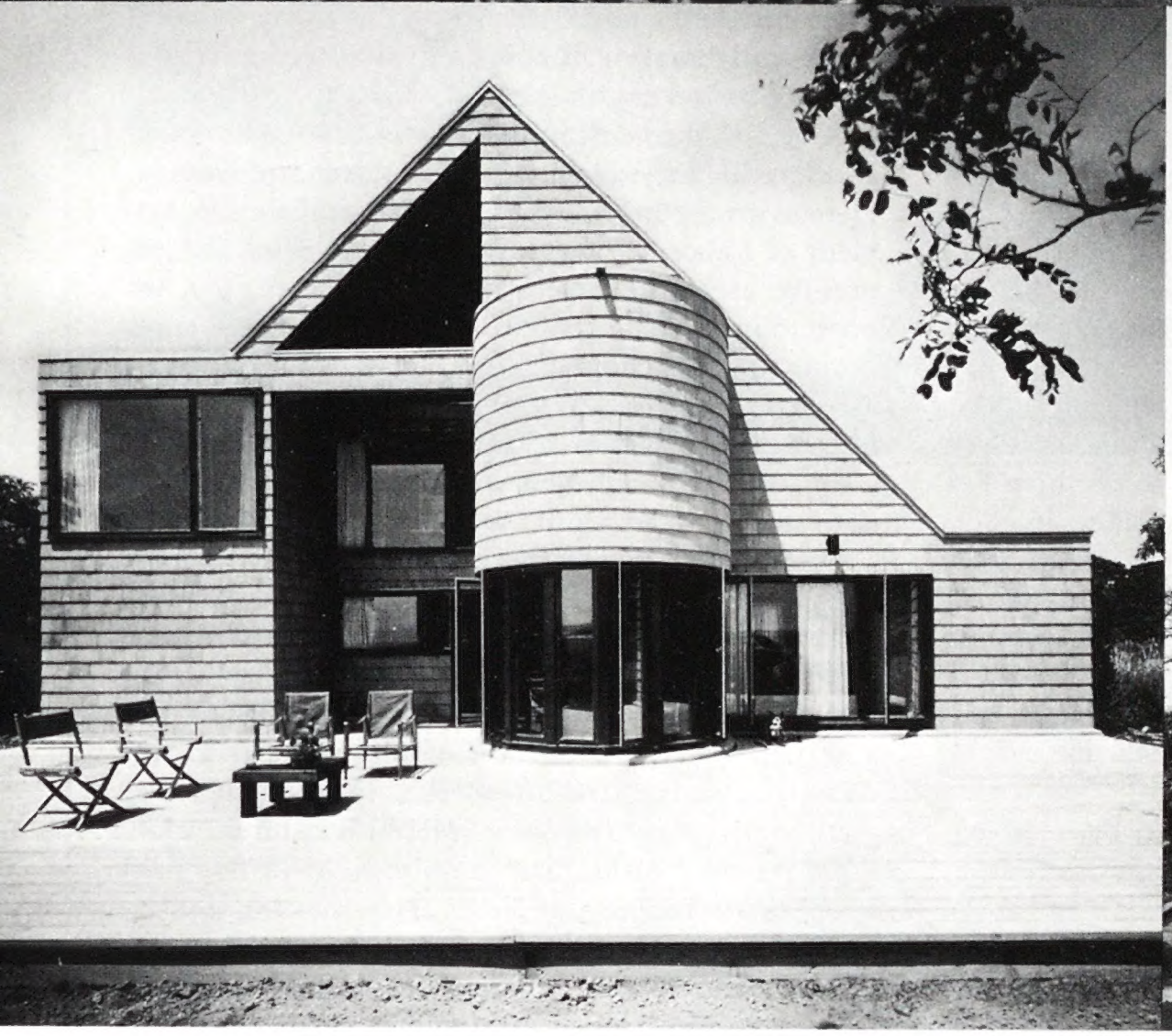

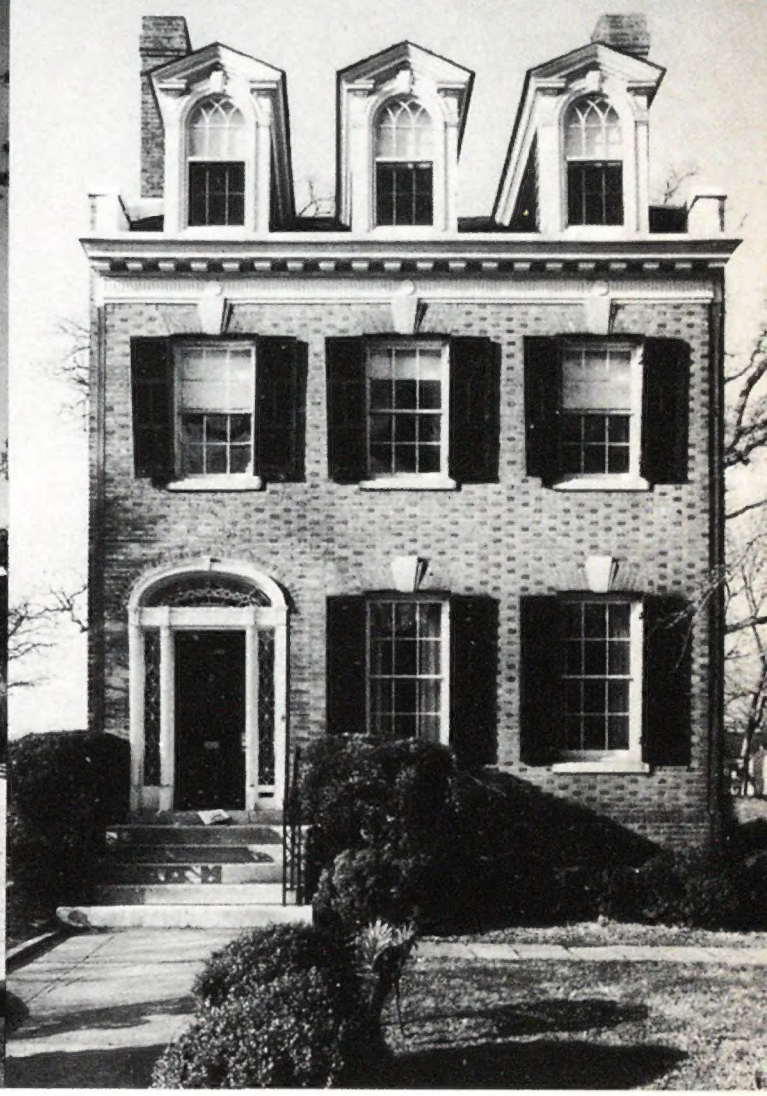

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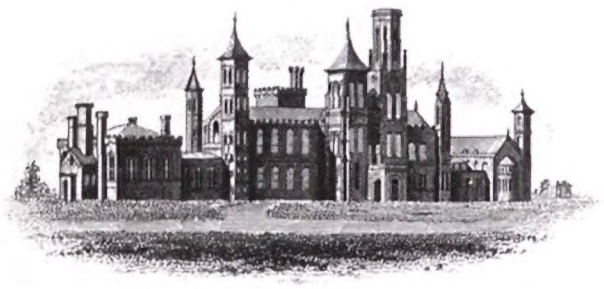
Secretary Ripley's comments

The view from the castle



Our Festival of American Folklife
on the Mall will be even bigger this year,
and bigger still as we look toward 1976

No one any longer believes that America is the great melting pot. Ethnicity is the word. We now know that we are not all one, that our diverse origins and backgrounds persist in spite of the best efforts of educators and "Dick and Jane" readers.

This is simply the formal recognition of what has been for some time an unconscious, largely unvoiced assumption: that people remain different, and that our civilization is a pluralistic one.

From July 3 through 14 the Smithsonian will celebrate this realization with its eighth consecutive Festival of American Folklife. Begun in 1967 as an effort to remind industrialized urban citizens of the persistence of crafts and the making of things—"taking the instruments out of their glass cases in the museums on the Mall, and showing, out of doors, how they are made and how they are played," as we thought of it originally—we have steadily widened its scope.

With the collaboration of the National Park Service, we have been able to extend our efforts from a few days to nearly two weeks, and have moved westward to the reflecting pool between the Washington Monument and the Lincoln Memorial. The vastness of our audience and the numbers of our participants seem to demand a larger stage. By the time of the Bicentennial, we expect to entertain ten times as many visitors with a Festival lasting all summer long.

Our themes have been chosen with the Bicentennial in mind. First, as always, comes "Regional Americans," this year featuring the folklore and industries of Mississippi. Then there is "Old Ways in the New World." Seven nations, from Scandinavia to Africa, will demonstrate their folkways alongside American counterparts. A new category is "The African Diaspora," which will emphasize the traditions of American black culture from its African origins to the present. If this collaboration is as successful as we anticipate, we hope to "take it on the road" in 1976.

A second theme of importance is that of the skills and lore of the American working man and woman. Here, with the help of the AFL-CIO and the Department of Labor, we continue to show a vital and expressive aspect of American life—and here, too, we hope to inspire similar festival projects in other cities during the Bicentennial.

Emphasis on native American cultural expressions is one of our special themes. Five years ago at an earlier festival, under a full moon, my wife and I danced a solemn measure on the greensward with Kiowas, Cheyennes and Comanches. "No one else has invited us here in nearly a hundred years because they were interested in *us*," one of them observed. It was Major John Wesley Powell, working for both the Smithsonian and the Department of the Interior, who started the systematic study of Indian cultures. How appropriate, then, to reflect his passionate interest here on the Mall —and for the Smithsonian to publish, in 1976, a new 20-volume *Handbook of North American Indians.*

And so with music and dance, with ritual and tradition, with food and folklore, the Festival of American Folklife will bring a tangible reminder of our diversity to all who come to Washington this July. As the barker says, "Hur-ry, Hur-ry, Hur-ry!"

S. Dillon Ripley

We agree—when you recover from a long illness, your wallet should be healthy, too.

Medical bills are the problem, but not everyone agrees on the solution.

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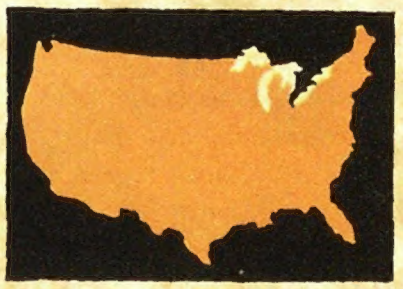

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Phenomena, comment and notes

An ancient solution for gas tanks, hope for the dyslexic, the rights of rivers and playfulness of moofs

Someday when there is an awkward lull in the conversation, you might wish to announce (and without fear of contradiction) that a moof does the leap-leap more often than a coy-dog does.

This datum has come to light in the course of an analysis of the play behavior of canids at the University of Missouri, the results of which were reported in *BioScience* by Dr. Marc Bekoff. The leap-leap is a maneuver in which the animal leaps twice or more, lifting its front feet simultaneously from the ground, and it is obviously an invitation to play.

Dogs do it habitually, wolves rarely and coyotes never (though all three have other forms of invitation). Knowing that, one might have rightly predicted that a moof (a cross between a wolf and a mala-

Confrontation or invitation? The raised paw is more important than the fangs.

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mute) would perform the leap-leap more often than a coy-dog (the issue of a coyote and a beagle).

Play among canid pups is apparently related to the need in adult life for cooperation. The canid family that plays together, suggests Dr. Bekoff, stays together.

A major question in such inquiries is: How does Dog A know that Dog B means to play and not to remove an ear from Dog A? Through messages and signals that serve to "alter the meaning of subsequent signals." The leap-leap is one; another (see photograph, p. 8) is the lifting of the paw. Such invitational gestures take precedence, it seems, over the bared fangs, the growls and the apparent mayhem which may follow. Of course play can get out of hand and turn into real mayhem: Canids keep the lid on by repeating the play signals, some of them sufficiently subtle to require stop-action movies for future analysis.

To extrapolate from beasts to Man is always highly risky, but in this case—considering small boys, professional hockey players and various diplomats—one can only hope Dr. Bekoff's research receives continuing support.

Hopeful news for dyslectics

Dyslexia is a condition in which children have varying degrees of difficulty recognizing and understanding letters and words, and one form of dyslexia—called developmental or primary dyslexia—affects between two and five percent of "all children of normal or superior intelligence," according to *Medical World News*. Its causes have resisted discovery, say two psychiatrists, Jan Frank and Harold N. Levinson of the State University of New York Downstate Medical Center in Brooklyn, because investigators have been looking for some sign of cortical damage. They, however, found that all but three percent of 115 dyslexic schoolchildren had lesions in the inner ear—specifically in the cerebellar-vestibular circuits. This condition, they believe, "disrupts ocular fixation and sequential scanning of letters and words."

They have tried using motion-sickness drugs in such cases and find that the "prognosis is good," except that the dyslexic schoolchild is often so psychologically traumatized by his or her condition that the drug's compensatory action is not sufficient. If they are right, the need

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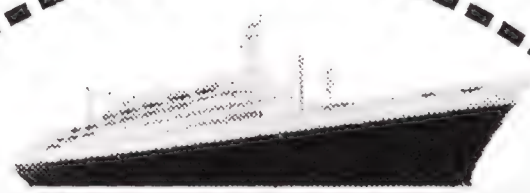

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clearly is for an early-warning system, and the two psychiatrists have developed an instrument for detecting the condition easily and efficiently.

Sic transit transit

The July 1973 issue of SMITHSONIAN contained an article on a model personal-rapid-transit system, or "people-mover," being built in Morgantown, West Virginia. The author, Daniel Jack Chasan, suggested the possibility that as Morgantown goes, so will go the nation.

If that is the case, then the United States will be deprived of personal rapid transit for a long time. According to the *New York Times,* the system's computer-operated vehicles carry only test engineers and, after three years, some politics and more than $57 million, the planned 3.2-mile elevated guideway is only two-thirds complete, in spite of heavy pressure from the nation's capital to finish up. The University of West Virginia, which was to be served by the system, refuses to take it over unfinished; and in late spring a Congressional subcommittee was wrestling with the need for another $6 million to complete the guideway. Meanwhile, one Department of Transportation official has suggested it would be cheaper to issue golf carts to each potential passenger.

Will autos hiccup?

That ancient commodity to which mankind has so often turned in times of personal crisis has now been urged upon us as the solution to the energy crisis.

In a paper given at the recent meetings of the American Physical Society and the Optical Society of America, Emory University's Peter Fong suggests that alcohol made from corn and other grain products can be mixed with gasoline in 1:4 proportions (hardly what you'd call dry), and that current automobiles can operate on it without engine modifications.

Dr. Fong's answer to where all the booze would come from is only part of his rosy vision. Half of the United States' potential corn-producing acreage, he says, is now out of production, while a number of breweries have recently closed down and could be reopened easily. Distilleries could become a legal part of every farm; the unemployed masses from urban slums would be encouraged to flock to the countryside to operate them.

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Sewage sludge could be used as fertilizer without consumer fear; cornstalks could be burned to provide the energy to run the stills; leftover protein from the process could be used as animal feed. Not only would air pollution drop sharply, but the cities' major problem—unemployment—would be considerably reduced.

Of course this isn't the first time that alcohol has been offered as a panacea, but still, it may be worth looking into. . . .

Pressing the case for preservation

Last Spring, officers of the World Wildlife Fund met with a roomful of ecologists at Belmont, the Smithsonian's conference center in Elkridge, Maryland, to see if the fund, after 12 years of intervening on behalf of endangered species, should take a new tack. Many of the ecologists, fresh from the field where they had been witnessing at first hand the rapid biological depauperization of the world, especially in the tropics, seemed to agree that an ecosystem approach rather than a species-by-species approach is necessary. But saving ecosystems is harder to sell than saving, say, tigers. Protecting natural areas for their own sakes is hard enough in the United States, not to mention in developing countries.

An unusual strategy for meeting such problems has emerged in a short, elegant book, *Should Trees Have Standing?* by Christopher D. Stone, a law professor at the University of Southern California (published by William Kaufmann, Inc.). Professor Stone perceives that the courts are edging toward granting legal standing to environmental groups which seek to defend a piece of property in which they have no economic stake.

Go all the way, says Stone, and give the rivers and trees legal rights of their own, to be exercised by court-appointed guardians. A river could then sue a polluter for damages and "use" the award to clean itself up.

If this sounds unthinkable, says Stone, so did the idea that slaves should have rights—and, more recently, women. If it all sounds too far-out to take seriously, listen: The sound you hear may not be the rustling of leaves but the hasty turning of law-book pages by a few alert and alarmed corporation counsels.

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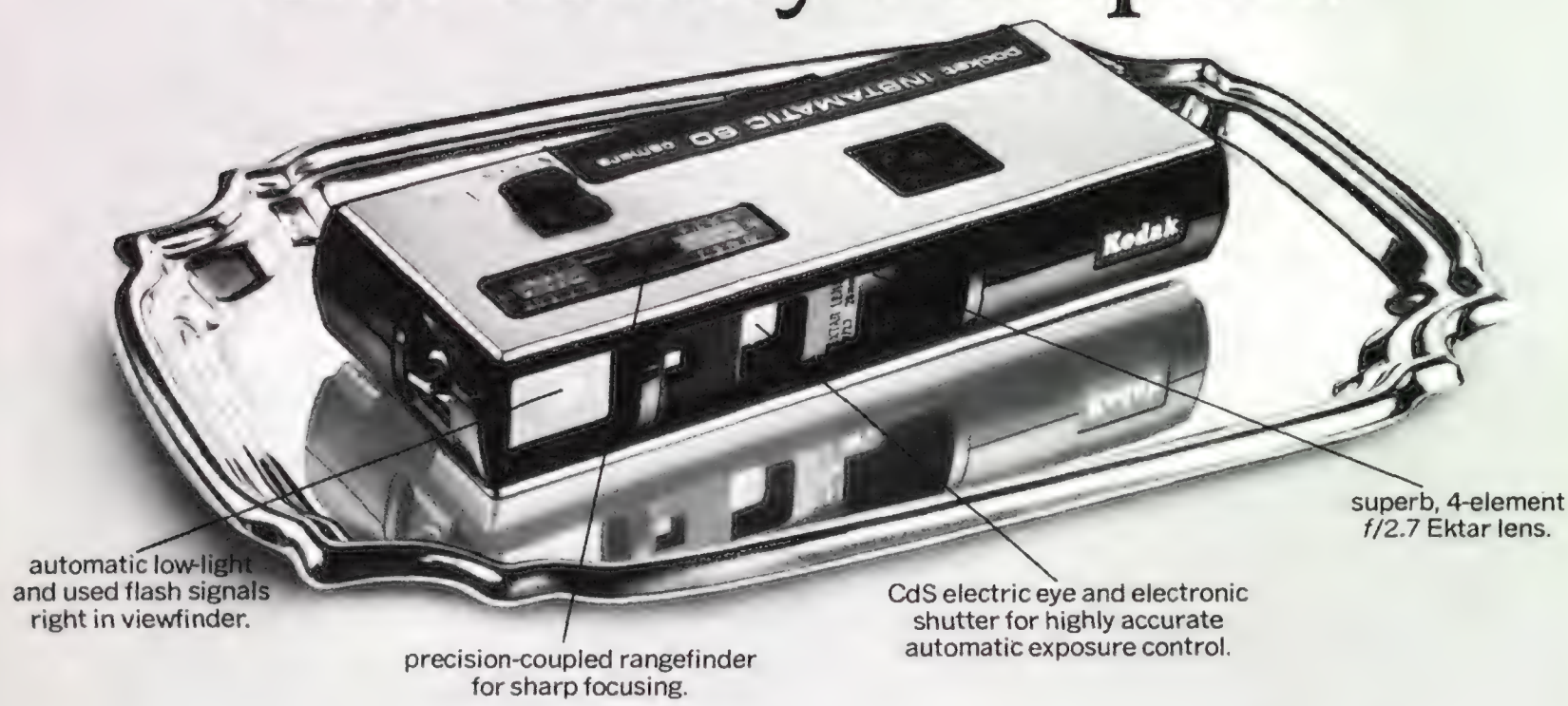
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Letters to the Editor

Canavesio's frescoes

Dear Sir: Robert Wernick's article in the April issue, "Medieval church offers dramatic frescoes of Passion," features Judas as a scene-stealer in the paintings by the 15th-century artist Giovanni Canavesio. I am struck by the anti-Semitism of the artist. In each representation of Judas, who was neither more nor less a Jew than Christ and the other 11, he is depicted with exaggerated Semitic features while others look like medieval Italians.

Canavesio has left a violent and moving treatment of the Easter story as well as a graphic record of the anti-Semitism that permeated Christian art and theology at the end of the Middle Ages.
William Leslie Clark
Professor of Bible Literature
University of Wisconsin
Stevens Point, Wisconsin

Dear Sir: Robert Wernick's statement that whatever is "bloodthirsty, violent or beastly aroused Canavesio's interest" must be weighed in relation to the fact that ecclesiastical art in the 15th century contained much that was violent; indeed, one need only refer to the terrifying paintings of the Flemish painter Hieronymus Bosch. Life in the 15th century was very harsh, and it is little wonder that this quality was expressed by contemporary artists.
Charles P. McDowell
Richmond, Kentucky

Preacher Beecher

Dear Sir: Fairfax Downey's article, "Preacher Beecher and The Creature," failed to mention an amusing incident in the Rev. Mr. Beecher's war on intemperance. According to Johanna Johnston in *Runaway to Heaven,* Lyman Beecher in 1830 delivered, in Boston, his famous Six Sermons on temperance. Neither he nor his congregation apparently gave a thought to the fact that, even as he railed against rum, they were practically sitting on kegs of the stuff. In order to meet church expenses, including Beecher's salary, the church cellar had been rented to a liquor dealer who used it as a warehouse for rum. A few days after the last sermon, the inconsistency came dramatically to light when the church caught on fire "shooting out fine blue alcoholic flames, [like] a vast plum pudding"—and the firemen laughed so hard that they couldn't put out the blaze.
Amy Ricks
Huntsville, Alabama

Dear Sir: For generations, help-wanted ads in the Connecticut Valley specified that "none but cold water men need apply." By the early 1800s an old custom had died out: Egg Pop Day, when boys eight to ten years of age, under the supervision of some elderly person, were each given a teacup of sugar, a half-pint of rum and six eggs, and then turned loose to careen about the village for the day. An early age to learn to pay the piper!
Doris H. Wackerbarth
Granville, Massachusetts

Radioactive waste

Dear Sir: In Dennis Farney's article "Ominous problem: what to do with radioactive waste," he neglected to mention still another noxious by-product of uranium fission: tritium. It has a half-life of 12.5 years and is a weak beta emitter, but it has the same chemical characteristics as hydrogen—it can combine with oxygen to produce heavy-heavy water and still be a source of dangerous protein-disrupting radiation. It is currently being discharged directly into the air or water.

The thinking, if it can be called such, is that tritium, being much lighter than air, would rise above the ambient atmosphere to be dissipated somehow in the stratosphere. But who can be certain that it will not combine with oxygen and become locally dangerous rain—whose total effect may not be apparent for years?
Leo Benezra, Russ Bimber
Mentor, Ohio

"The last thing our country needs is **dull, unquestioning conformity on the part of our young people"**

These excerpts were taken from a talk by Stewart S. Cort, Chairman, Bethlehem Steel, at the Annual Honors Convocation, Oklahoma Christian College, Oklahoma City. If you would like a copy of his entire talk *("Changing Attitudes")*, write: Bethlehem Steel Corp., Public Affairs Dept., Bethlehem, PA 18016.

"According to what I read there's been a definite change in the attitudes of today's student population. They're more conservative and traditional in their outlook and behavior.

I hope your generation has the common sense and wisdom to adopt the good side of yesterday's attitudes and behavior and reject the bad side. But most of all, I hope that this alleged 'return to conservatism' doesn't mean a return to the apathy and neutralism that characterized past generations of college students and young people generally.

Nation hasn't rejected social progress

Unfortunately, some people see this return to conservatism as proof that our nation has turned its back on social and humanitarian progress. I don't see it that way at all. The majority of people in this nation haven't rejected social progress. To my way of thinking, what they rejected were the revolutionary tactics that endangered the very fabric of our society, extreme and often violent tactics that were seen as doing more harm than good.

And I hope we've learned the lesson that our people are willing to change—if and when the proponents of change go about it the right way—by working within the system rather than attacking it from outside.

There are a lot of young people out there, whether or not they think of themselves as 'radicals,' who are still determined to bring about pretty substantial changes. And as long as they stay within the law and carefully observe the rights of others, I wish them the best of luck.

Quiet revolution in corporate corridors

What most of the institutions of society are looking for today, more than anything else, is the kind of man or woman who wonders, who doubts, who questions, and who tries hard to find new and better answers to the old, nagging problems.

Business firms like mine welcome that kind of person. We not only welcome them, but we do our best to train them, and sharpen their skills, so they can apply their talents and energies more effectively.

Unnoticed in all the confusion on the outside, a quiet revolution has been going on in the corporate corridors. Today the institutions of business and industry are making a determined effort to create a more humane environment for their employees and the communities they work in.

'Do your thing' best from the inside

So I urge you, whatever your ideology, to join the established institutions and 'do your thing.' If you want to promote higher standards of moral conduct, if you want to humanize working conditions, if you want to make institutions more democratic, if you want to make them more responsive to the people they serve—you can do it best from the inside.

In spite of all the jolts and shocks and setbacks, our country is making progress. And we'll keep on making progress if you do your part—and I'm sure you will."

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This is a Picasso, all black and blue.

"Les Pauvres" by Pablo Picasso, 1905. ($9,600 framed).

Picasso's famous "Blue Period" wasn't named just for a color.

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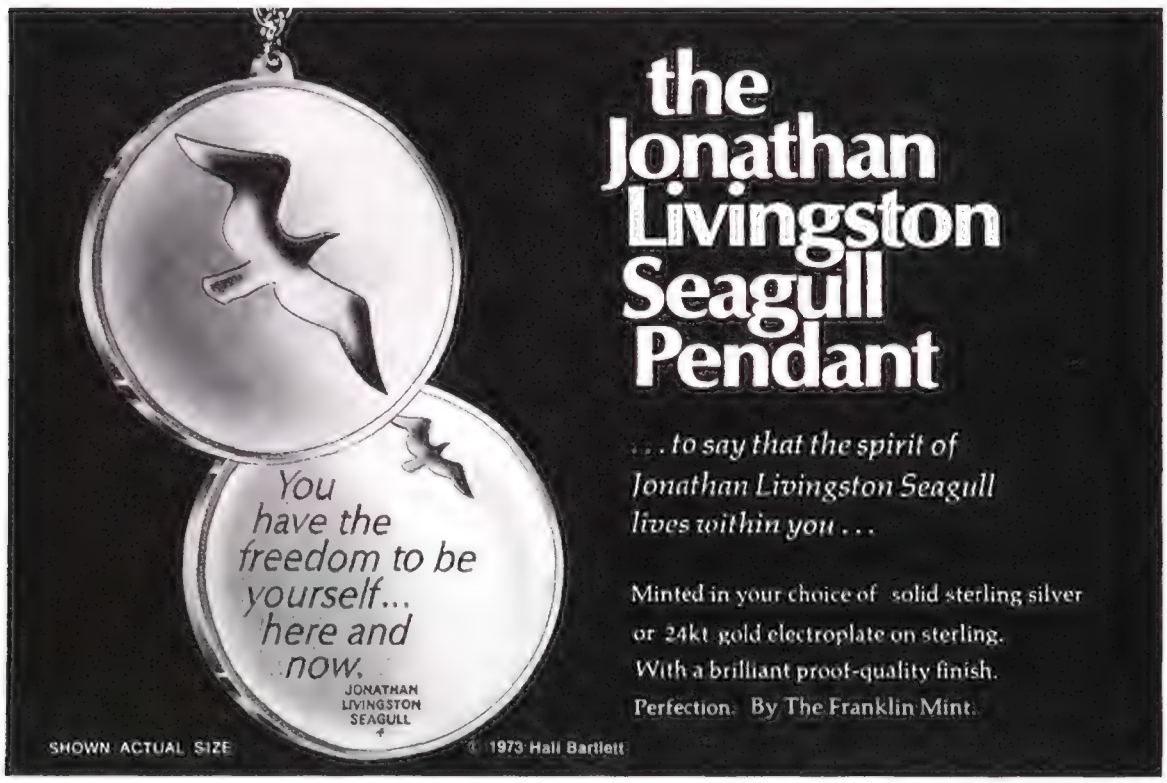
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Dear Sir: As an individual, I wouldn't fear living adjacent to a large nuclear reactor. The probability of catastrophe during the remainder of my life, say 25 years, is negligible compared to the everyday hazards of living. But to risk the whole Earth by storing poisons sufficient, within a century or two, to pollute every ounce of water on board is surely folly. Safe storage for 25 years is a reasonable expectation. But 250 years? No one can have the faintest conception of what civilization will be like when half that time has elapsed. And *250,000* years?
Crawford MacCallum
Albuquerque, New Mexico

Dear Sir: The caption for your color photograph taken at Brookhaven is misleading, since the picture is not of a research reactor, *i.e.* a nuclear reactor, nor are the "radioactive cores" glowing due to radioactivity. Rather, the radioactive wastes are being formed into ceramic materials at high temperature in a common industrial oven. The thrust of the experiment (which was closed out for lack of funds) was to incorporate radioactive wastes in thermally stable materials, such as glass or ceramic, which will not leach during long storage in potentially hostile environments.
R. Christian Anderson
Assistant Director
Brookhaven National Laboratory
Upton, New York

Petrarch

Dear Sir: Since Petrarch died in July, why was April chosen to celebrate the 600th anniversary of his death?
Orin K. Wolfe
Phoenixville, Pennsylvania
Petrarch was born in July and died in July, but he considered that his life was governed by some sort of fate inextricably associated with April and, particularly, April 6. As the article pointed out, it was on this date that Petrarch arrived in Rome to receive his laureate crown, that he supposedly met Laura and that Laura was reported to have died. Ed.

Bluebirds

Dear Sir: Brooks Atkinson's depiction of the bluebird's plight reminded me that perhaps the key to restoring its numbers lies in using the bird's own habits and

Cheers to the Bloke in the Black Bowler Hat

from British History Illustrated, the new magazine that celebrates 2,000 years of British history, tradition, culture and endearing eccentricity

If you were going to rescue the boys from Dunkirk, you'd probably go wearing blue jeans like everyone else. But one bloke who fought the perilous seas that grim day in May, 1940, went dressed as **he** felt a proper Englishman should—with umbrella, striped trousers and black bowler hat.

Cheers to him—and to the kings and courtiers, poets and prelates, harlots, clowns, pirates, adventurers, saints and sinners who have made British history the world's richest, most romantic, most idiosyncratic and most valuable for present and future generations to study.

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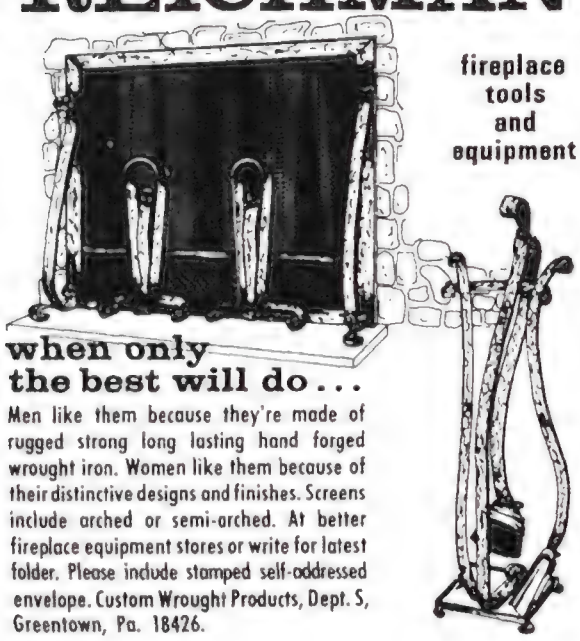

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preferences in the placement of bluebird houses. I believe the bluebird is willing to nest much closer to ground level than either the starling or the English sparrow. I have found them in southeastern Indiana nesting in fence posts no more than three feet above the ground. If this height is too low for the bluebird's rivals, then we have found a way to enhance greatly the bluebird's prospects.
Gene Martin
Denver, Colorado

Postcards

Dear Sir: I thoroughly enjoyed your article, "Story of postcards goes back a century," and have spent a nostalgic afternoon browsing through my grandmother's old albums.

In the early part of this century, postcards were valued by all members of the family. Our family, in the Eisenhower phrase, was poor but did not know it. We had no phone, and after the washing, ironing and bread-making were done for the week Mama would ask one of her four children going to school to mail a postcard to Grandma, who lived on the other side of town. The card would invite her to meet Mama at the movies at 1:30 P.M. Grandma received it in plenty of time in the second delivery of the day. And all of this for a penny!
Ethel P. Flynn
Ridgewood, New Jersey

Phenomena, comment and notes

Dear Sir: James K. Page's report on the scientists' conference in San Francisco was prejudiced and unfair, beginning with the palpable put-down of Immanuel Velikovsky's "improbable name" to the omission of his proved predictions.
Kate Schorr
Van Nuys, California
We regret the use of "improbable name," but Mr. Page points out that the report was in the spirit of the meeting and could not, of course, cover all theories. Scientists say that too many of Velikovsky's theories have not *proved to be correct for him to be taken entirely seriously.* Ed.

Dear Sir: You refer to a physicist's idea of harnessing the oscillatory motion of a Dippy Duck to run generators, and then facetiously suggest that it might instigate a religious cult.

Extrapolate the principle (a chemical that reacts to temperature change) that causes Dippy Duck to drink into an open ocean setting, say off Miami. The surface water temperature averages 74 degrees F over the year, while 2,000 feet down the water is 40 degrees F. Place a closed-cycle heat engine in that ocean environment with the same chemical or similar substance exhibiting the same low boiling temperature, such as ammonia or propane. Then pump the liquid that condenses at the ocean depths to the surface, and place a turbine near the surface where the liquid vaporizes. Finally, connect the turbine to a generator.

This form of non-polluting, regenerating energy may not form the basis of a religious cult, but it has inspired the National Science Foundation and companies like mine to commit many man-years of scientific talent to benefit this fossil-fuel-depleting world. We are serious about ocean thermal energy's viability.
John S. Hollett
Global Marine Development, Inc.
Los Angeles, California

Dear Sir: Please don't put down the vanishing slug. Unlovely it may be, but it is as consequential a part of the genetic pool as, say, the vanishing leopard.
Nancy E. Brandauer
Boulder, Colorado

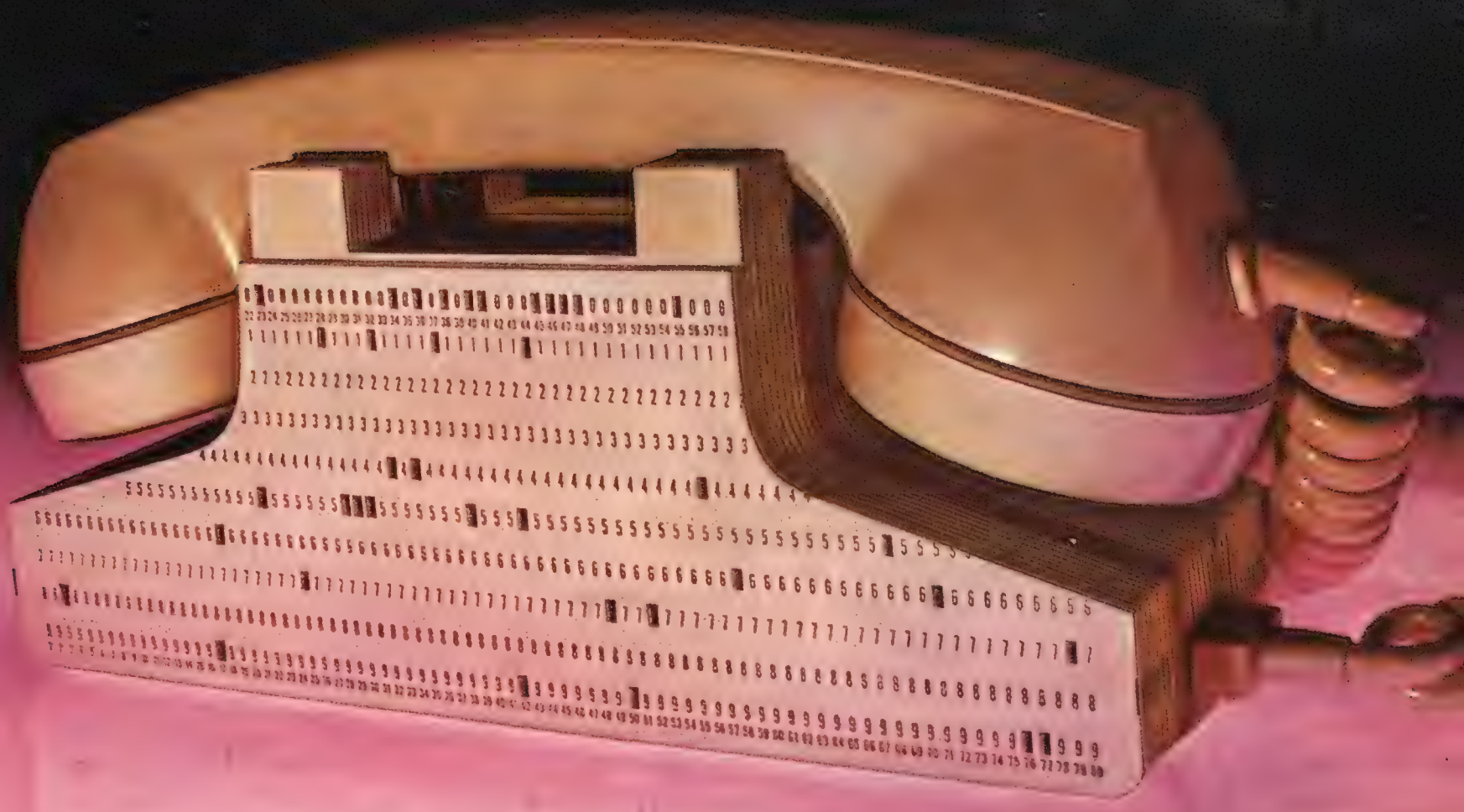
A blizzard of paper

Dear Sir: Patrick Ryan's article about the blizzard of paper from the ubiquitous office copying machine inspired me to rush down to the plant and run off 50 copies for my colleagues.
Harold B. Norris
Lakewood, California

The issue

Dear Sir: I am an octogenarian with boyhood memories of the Boer War. Now, you frighten this old man with 250,000 years of radioactive waste, hunger in Honduras and El Salvador, and being smothered by paper.

Our spaceship Earth's real menace is too many people. With no remedy in sight, how long can the United States continue to consume 40 percent of the world's resources?
William A. Doppler
Florham Park, New Jersey



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JUNE 1774

In France, a 16-year-old bridegroom is torn from his 14-year-old bride and sent off to play war games with his regiment. His name is Marie-Joseph-Paul-Yves-Roch-Gilbert du Motier, Marquis de Lafayette, and his new king, Louis XVI, has just promoted him to captain in the Noailles Dragoons.

Not far away, a French statesman rejoices at the third birthday of his son, Eleuthère Iréneé du Pont de Nemours.

In Scotland, Mr. James Boswell receives a letter from his friend Dr. Samuel Johnson informing him that the first pages of a new book, *Journey to the Hebrides,* an account of a trip they enjoyed together, have gone to press. Mr. Boswell writes back, chiding Dr. Johnson for not answering some specific questions previously posed in earlier correspondence, and for not acknowledging articles that Mr. Boswell has sent him.

Not far away, a 15-year-old farm lad, Robbie Burns, reads bits of Shakespeare and memorizes the cadences from a book of English songs as he jolts down bucolic byways in his cart.

In the town of Lewes, Sussex, young Thomas Paine formally separates from his wife. He appears to have maintained little interest in, or even need for, his husbandly obligations, being much more concerned with his burdensome debts, his

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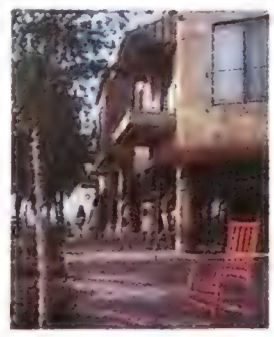

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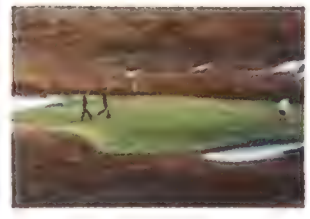

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Not far away, where trees and lawns and shrubs are greening beside the placid Thames, Britain's leaders of government are thankful for the end, at last, of a difficult winter and spring. The accursed business of Boston's Colonials and the tea has required a firm response from the Mother Country, and it has been made. The Port of Boston Bill is in effect: The city is sealed off, ostracized by law. News of further Coercive Acts, as they were named, should be reaching the colony.

The Whig defenders of America fought to restrain Lord North's government from drastically altering the machinery of Colonial government, pointing out, among other things, that Boston was undoubtedly repentant for its thoughtless and destructive tea party of last December. But the Tories suddenly sprang the news that in March the brig *Fortune* had entered Boston with 28 cases of tea, and although the tea was not that of the East India Company, some 60 Bostonians had attached a few Indian feathers to their hair, boarded the vessel by force and dumped the chests into the harbor. A second tea party, by gad! This *did* seem extraordinarily defiant. Opposition to the government's new measures ebbed.

What this additional punishment amounted to was a change in the charter of Massachusetts, tightening the authority of Britain over the colony. One act provided that government officials accused of crimes in the colony must be sent home to Britain for trial. This, of course, got them out of the hands of the Americans, against whom they had committed their crimes. The other new measure, the Quartering Act, allowed British troops to seize unoccupied houses and barns in America for billeting themselves. Since the newly appointed replacement for Governor Hutchinson is a military figure, General Thomas Gage, the Quartering Act makes it quite clear that Boston has now come under martial law, and no mistake.

Severe punishment indeed, but as the Parliamentarians sip their sherry this June they feel relief that it is over, that the recalcitrants will pay damages, then royal forgiveness will surely come.

Three thousand miles away, in Boston, the month is greeted with the tolling of bells, funereal music to mark what seems to be the death of a city. The port is closed to all incoming vessels; in two weeks no more shall leave it. Thomas Hutchinson, whose family goes back to the very founding of New England, as heartily and emotionally American as anyone on the continent, leaves his home and sails for Britain. He is an anguished passenger, determined in his sense of duty to his king, shattered by the vicious hatred which he has stirred among his fellow townsmen. He feels his recall is a rebuke for his handling of the tea party and the general lawlessness in Boston—which at one time resulted in the burning of his own home. Yet he cannot see how he could have altered his approach.

Behind him he leaves a population that is faintly beginning to wish he were back again. Life is hard in Boston. Supplies and money come in to help this disaster area—wagons known as "Lord North's coasters" arriving overland—from other colonies and from Britain itself. But the city is filled with fresh British regiments: the King's Own, the 43rd, the 5th, the 38th, the Royal Welsh Fusiliers, some Royal Marines and artillery. Seeking their protection from the rampages of the Liberty Boys in the countryside, loyalists flock to the city. Lord Percy, commander of the 5th Regiment, begins dating Dolly Quincy, the perennial flame of John Hancock, the militant merchant. Boston isn't so dead, after all.

As news of the other Coercive Acts—here called "intolerable acts"—reaches the Colonies, it becomes entirely evident that Boston's problem is the problem of all. The loss or change of one charter can mean the loss or change of any. A full meeting of delegates from all the colonies is the one best hope of ending a situation rightly called intolerable.

On June 17, Sam Adams and his friends make a formal resolution for a continental congress to meet on September 1. Delegates are chosen—Adams himself and his cousin John, James Bowdoin, Thomas Cushing, Robert Treat Paine. Hearing of these doings, Governor Gage tries to dissolve the meeting, but the patriots have thoughtfully barred the door.

Far, far away from all this turmoil and mounting sense of excitement, far beyond all politics, Captain James Cook of the Royal Navy is visiting the Tonga Islands in HMS *Endeavor*, his only concern the increase of Man's knowledge.

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The oceans are vastly overrated as a source of food and fuel

And the seashores are becoming less and less satisfactory either for recreation or for the development of factory complexes

Traditional California fishermen net small fish for bait (opposite), then heave and haul with sturdy poles when they encounter a school of tuna (above). Much tuna fishing today, however, is done from ocean-going clippers that catch tons at a time in mile-long nets.

Color photographs by J R Eyerman, Documerica and Photo Researchers

Diplomats are gathering in Caracas, Venezuela, this month for the Law of the Sea Conference to try to carve the oceans into parcels. While they argue, it is well to consider some marine myths that are still at large in the minds of many.

Myth: If we develop more sophisticated fishing technology, we can open up the ocean as a vast cornucopia to feed the globe's hungry millions.
Reality: There are fewer fish now than 20 years ago and some are approaching depletion.

Myth: Aquaculture—farming fish, shellfish, plankton and kelp in the sea and in fresh water—could supply us with more food than we'll ever need.
Reality: Sea farms probably will never amount to more than a supplement to actual fishing.

Myth: All that oil lying under the Atlantic continental shelf will provide a solution to the energy needs of the United States.
Reality: The way we use up oil, our undersea supply could be depleted in less than a decade.

Myth: The road to riches and full employment for a poor nation lies in industrializing the coastline.
Reality: Where it has been done—as in the Caribbean—unemployment is just as severe.

Myth: Americans prefer a fast dollar—in the form of an oil refinery or a condominium—to a stretch of open beach or a marsh.
Reality: Fortunately, more and more coastal states and localities are turning down such proposals.

The article that follows takes a realistic look at the seas' resources, exploding the Fat Ocean myth along with a few others. It also points to some ways that mankind can best use the marine environment.

By Wesley Marx

Development of new territory is fueled by dreams of riches, dreams that are not always accurate. The nations of Europe developed the New World, only to be evicted by their own colonists. Thomas Jefferson opened the Louisiana Territory to development—and to the confrontation between Free and Slave States.

In the early and mid-1960s, development of the oceans was perceived as a way to fuel, feed and otherwise enrich the United States and the world. Technology would conquer the oceans. Developed nations could prolong their life-styles. Less developed nations could bootstrap themselves into affluence.

The oceans were seen as a still largely untapped source of food. Critics chastised the United States for not having developed modern fishing fleets, like those of Japan and the Soviet Union, complete with factory ships that process and freeze the catch at sea. The United States catch runs just under five billion pounds a year, while the Japanese total is more than 20 billion and the Russian more than 15 billion. Yet it is just the technological advances used by the USSR and Japan that may soon deplete the world's fisheries. The oceans are not an inexhaustible source of food, especially if we insist on eating only the predators at the top of the food chain.

In some areas, fishing pressures have already exceeded the capacity of some species to maintain their populations. The California sardine, which kept millions going during the Depression when they could not afford beef or the refrigerators to keep it in, has been fished out. They are protected now, but are not expected to recover in commercial quantities until the year 2000.

Other fish are in trouble. The best year for haddock

Wesley Marx's next book about the sea, The Pacific Shore, *is scheduled for publication in September.*

A Coast Guard cutter comes alongside a Soviet trawler caught fishing inside the 12-mile limit.

was 1929, when 294 million pounds were landed. By 1952, the catch was still a respectable 160 million pounds. Just 20 years later, however, landings totaled only 12 million pounds. For other species, the point of diminishing returns will be reached or exceeded by the end of the decade. Tuna clippers now crisscross the globe to fill their holds. Scarcity has placed such delicacies as scallops and lobsters beyond the pocketbook of many a seafood fancier.

Amid hectic fishing competition, more and more national resources may be invested for less and less return. Less developed nations in the southern hemisphere, watching this competition deplete offshore resources, are expanding their borders seaward. One can envision rival fishing armadas from Japan and the Soviet Union converging upon a fish slick, decoy-

ing each other with false schooling sounds, laying down fog banks, jamming each other's sonar, and then suddenly reversing their engines when a gunboat of a Latin American country materializes to demand a million-dollar fishing license, a fourth of the catch and a technical assistance pact.

Indeed, such fishing-technology developments, despite their sophisticated look, can encourage wasteful consumption and poor resource management. The Soviets and Japanese have turned to the sea after depleting their domestic fish stocks and polluting some of their most fertile waterways. At the same time, Russia lags in agricultural development. Better resource management at home has been subordinated to investment in ocean exploitation.

Marine abundance can be just as illusory for less developed nations. Peru has led the world in the tonnage of its annual catch because of its anchovy fishery, which runs as high as 23 billion pounds a year. Rather than serving as a protein source for South America, however, this catch is exported as animal feed to developed nations because of Peru's need for foreign exchange. In 1973 an intrusion of warm waters resulted in a low reproductive rate for the anchovies, and Peru had to close the world's biggest fishery. The Food and Agriculture Organization reported that the natural calamity on top of the heavy fishing pressure in recent years may complicate the normal comeback of the anchovy. Peru's fishing fleet was tied up in harbor, and world prices for soybeans and corn—needed to replace the fish meal in animal feeds—rose rapidly. The anchovies returned this year, and fishing resumed. Whether they have fully recovered remains to be seen.

This is not to say we can't do better. If fish stocks survive current overfishing, it is biologically—if not politically—possible to harvest a larger catch than we do now, perhaps twice the present total. In the case of the United States, we can increase the oceans' yield by developing a taste for organisms that other countries prize, such as mussels and squid. The Russians have developed a nutritious paste from krill, a shrimplike crustacean that was a favorite food of the world's now nearly depleted whale population.

Sea farming provides another expanded approach to seafood. The Japanese, growing oysters on rafts, produce up to 23 tons of oyster meat per acre per year, far and away the most animal protein per square unit of the Earth's surface. Fresh-water fish culture holds even more promise; mainland China has shown the way here, but even in the United States pond-production of catfish now exceeds the catch in the wild.

Aquaculture is no panacea, however. C. P. Idyll, when he was chairman of Fishery Sciences at the University of Miami, urged that it be pursued vigorously, but cautioned: "The idea of sea farming or 'aquaculture' has quickened the imagination of the public generally and led to rosy expectations. Many of these are unlikely to be fulfilled. Sea farming probably will never replace fishing in the same way that land farming replaced hunting."

Oil from beneath the sea will only postpone the inevitable

Petroleum is a major part of the oceanic dream. Besides meeting energy needs, this anxious turn to the seas, it is hoped, will increase federal revenues (from offshore leases), improve our balance of payments and reduce our dependence on foreign sources. Yet in evaluating the petroleum potential of the continental shelves for the Committee on Resources and Man,

Camouflaged oil derricks are set among palm trees to make a pleasant view from Long Beach, California.

geologist Preston Cloud of the University of California at Santa Barbara reported: "Even the largest quantities likely to be found offshore (including petroleum that may now be forming) will not greatly prolong the exhaustion of estimated reserves at current rates of consumption."

In March 1974 the U.S. Geological Survey sharply reduced its estimates of the petroleum deposits on the Atlantic continental shelf. Where in 1968 the Geological Service had placed the numbers at 48 billion barrels of petroleum liquids and 220 trillion cubic feet of natural gas, the new estimates lowered these to 10 to 20 billion barrels of liquids and 55 to 110 trillion feet of natural gas. The March 1974 report placed the recoverable oil in the Gulf of Alaska at anywhere from three to 25 billion barrels.

These are large numbers, and a significant fraction of the proven U.S. reserves, most recently placed at 48 billion barrels of liquids. But with our annual consumption now five billion barrels, they do not represent a long-term supply.

The eventual answer lies not in getting our oil elsewhere (we are running out of elsewheres), but in changing or modifying our demands. It does no good to protest drilling the salt domes of the Gulf of Mexico or the waters off Cape Cod if we demand more gasoline for our cars and more fuel oil to heat our homes.

Some states are starting to say that the shore belongs to us all

The edge of the continental United States has been projected as a linear quay, a terrestrial anchor for global marine exploitation. But the Atlantic and Pacific coastal states cope not so much with a marine frontier as an urban situation with all its problems.

To complicate this picture, a high degree of environmental quality is required for many uses of the shore: recreation, leisure, sightseeing, a sense of exhilaration or relaxation, serenity and solitude. While hard to quantify, these qualitative values are deeply felt and often shape attitudes toward economic or ecological issues. Many coastal communities began in the 19th century as religious-oriented vacation retreats to restore the spirit of harried urban dwellers. There are now large coastal communities—virtual downtowns of leisure—where the fastest-growing labor segment, the labor-intensive service industry, is tied closely to the quality of natural values. In their own lifetime, many coastal residents and vacationers have seen undeveloped open shore transformed into an opulent chain of condominiums in which beach access—physical or visual—is predicated on wealth. Citizen groups—the friends of this bay or that shore, the citizens against this superport or that fill project, the defenders of this peninsula or that beach—show a growing concern for controls on coastal development that will reflect long-term public goals as well as strictly short-term economic ones. When a utility executive complained that

construction of a coastal power plant was being delayed by environmental considerations, California legislator Alan Sieroty countered this way: "You talk about how long it takes to build a power plant; apparently you haven't thought about how long it takes to build a coastline."

Thus, while one perspective, particularly at the federal level and in industrial circles, promotes the coastal zone as an undeveloped frontier, coastal states grapple with the consequences of accommodating unlimited demands on a limited resource: the coastal environment. Today coastal states are engaged in a most challenging political task—attempting to sustain or restore a high-quality environment in the most urbanized area on the planet. This task requires that new political and social institutions, not just new technology, be developed. Many coastal states have established commissions to plan for and, as in the case of California, actually regulate the coastal zone as a limited resource of the highest public interest. As a reflection of this mandate in California, commission representation includes members of the public as well

Oil platforms, like these in Cook's Bay, Alaska, may become a common sight along the Atlantic Coast.

as representatives of resource interests such as fisheries and oil.

The very existence of the California Coastal Zone Conservation Commission testifies to the public desire for controls over marine and coastal development. Legislation for such a commission was bottled up in committee as a result of intensive lobbying by utility, oil and land development interests. The California Coastal Alliance, a citizens group aided by such diverse organizations as the United Auto Workers, the League of Women Voters and the Sierra Club, put an initiative on a state wide ballot and won by a 55 percent majority. Even a million-dollar campaign war chest against the commission measure failed to dissuade the public mind.

In an early commission decision, a conventional-enough shore improvement—a community renewal project involving a 639-unit condominium—was disapproved, because it would provide no housing for elderly people displaced by the project. Noted the staff report, "The issue is whether the elderly, many of whom are longtime residents of the area, should be deprived of the opportunity to live in the coastal zone by the actions of the private housing market and of public agencies." At the same time, a private camping ground was approved. According to the staff report, "Landowners and developers should be encouraged to provide increasing opportunities for Californians of all levels of income to enjoy coastal areas." Conversion of an oceanfront amusement park to opulent condominiums was also denied.

Much of the American shore could become off limits because so many shore uplands are privately owned. At last count, of the total U.S. shoreline of 59,157 miles (excluding Hawaii and Alaska), only two percent is in public ownership and available for recreation. Senate Interior Chairman Henry Jackson introduced a bill in October 1973 that could help reverse the trend. But, for the time being, any change in this pattern is up to state and local government. Acquisition would bankrupt many coastal states. However, a number of state courts have recently ruled that property rights cannot be paramount in the development of such a limited land resource. The Oregon Supreme Court, for example, has upheld state regulation of shore uplands because of evidence of customary public use extending all the way back to the Indians. A number of coastal states now require new development to set aside physical and visual easements to the shore, including bikeways. This concept of shared use, regardless of ownership or political boundaries, promises to play an increasingly crucial role in the effective management of limited coastal resources.

Reforms in coastal management are leading to in-

Condominiums, offering boat slips at the doorstep, crowd the shore at Marina del Rey in California.

A Florida housing development has channels for boats, but is not connected to the nearby ocean.

teresting alternative uses. Instead of trying to disaster-proof the American coastline against hurricanes, tidal flooding, riverine flooding, seismic sea waves and coastal earthquakes, many coastal states are placing controls on development to prevent such costly exposure to natural disasters. After its downtown area was wiped out for the second time by a seismic sea wave, Hilo, Hawaii, relocated its commercial center inland. The shorefront became a spacious and beautiful open safety zone. Recreational and tourist opportunities have opened up. Shore access is insured for all the public and not just those who can afford condominium rentals or a yacht slip. Besides conserving lives and disaster funds, such compatible land use can protect estuary life-support systems, aquaculture sites, maritime forests and prime coastal agricultural lands.

The major lesson from the oceans may be to teach man how to live on land. Exposed as they have been to the costly consequences of uncontrolled industrial development in the past, citizens of the U.S. coastal states, for example, are ideally equipped to understand what intensive development can and *cannot* buy. The coasts have, like the oceans, been seen as a royal road to riches. This, too, may be illusory.

Coastal industrialization has been advocated as a means for less developed nations to "catch up" with developed nations. Yet, despite extensive industrialization, Puerto Rico still suffers from a high unemployment level—currently more than 12 percent. Many young people still migrate to the mainland for a job. Of course it is said that without industrialization unemployment would be even worse. Many coastal industries, however, including oil refining, are capital rather than labor intensive. Today, more industrialization breeds skepticism. "If the superport or deep-water port is so advantageous economically and will bring so much progress, and if there is such a low risk of pollution by enormous supertankers reaching our shores with Middle Eastern oil, how come the Eastern Seaboard states are not interested in such a bounty?" wrote political scientist Carmen Gautier of the University of Puerto Rico to the *New York Times*.

Citizens of Durham, New Hampshire, were more succinct. When Aristotle Onassis offered them a 400,000-barrel-a-day refinery, with a $10-million payroll, they turned it down, eight to one, last March.

Today there is increasing interest in a more stable, labor-intensive type of economy based on natural renewable resources: agriculture, fishing and shore tourism. But existing side effects of industrialization—wa-

ter pollution, subdivision of agricultural land—narrow such policy options.

The concern of coastal states and their citizens with control of marine development is not without contradictions and shortcomings. I've seen coastal residents employ environmental arguments to block freeway construction and then oppose beach bikeway systems that "interfere" with use of "their" beachfront. Some state coastal commissions are so woefully underfunded that they are no more than showcase agencies to take the political heat off elected representatives.

Yet the social and political reforms under way—shared use, concurrent jurisdiction, public access rights, enlarged public representation, integration of upland and offshore planning, land-use controls, consideration of qualitative as well as quantitative values—are certainly significant. These reforms tend to debunk the cultural myth that Americans prefer technical "fixes" over changes in political and social attitudes. Perhaps for the first time in our history, resource development is being placed within constraints of broad public goals, however incomplete or imprecise, that rise above short-term economic gains. Coastal and marine development is being considered in terms of what all major development represents: not necessarily a magic economic panacea but a major agent of cultural and political change in which there can be both winners and losers. The question of development is expanding into the question of who shall control its wide-ranging consequences and to what larger purposes.

Perhaps the lessons we are beginning to learn on the coasts can be applied to the oceans. Now national fears over being "left out" in the competition for diminishing global resources tend to override efforts to place marine development in a broad framework of social and economic goals. Much stress is given to coming up with some magical formula of political boundaries—the 200-mile limit, the three-mile limit, the continental margin—without any frank and objective appraisal of just what such boundaries mean as

nations outrace the planet's capacity to support their demands. Will the oceans that were to bring nations together actually encourage national or regional programs directed toward resource monopoly, buttressed by unilateral extensions of coastal sovereignty? Will southern hemisphere nations "lock up" their coastal zones or place nations of the northern hemisphere with overextended resource bases on short rations? Will the nations of the northern hemisphere create marine-resource consortiums that can stockpile, cut prices, and break up national monopolies? Will multinational oil companies eventually control and finance capital-intensive marine enterprise, from seabed mining to fishing to sand-and-gravel extraction?

As nations become aware of the self-defeating competition for diminished global resources, the need for innovative cooperation may become more persuasive. Natural disasters, from earthquakes to drought, affect both developed and less developed nations. A pilot international institution for disaster assistance might be empowered to tax, manage or receive development rights to selected marine resources. Recipient nations would be required to implement building, land use, and conservation measures to mitigate exposure to natural hazards, particularly in the disaster-prone coastal zone. Such an agency, depending upon its success, might eventually serve as a protein management center for the world, geared to more efficient harvesting and use of living marine resources, and enabled to end their use as pet food or livestock feed. Idealistic? Perhaps. Yet this is only one of many ways marine development can be geared to the limited nature of the marine environment rather than being cloaked in slogans of magic economic advancement.

Such a pilot agency would not by itself solve the world's food problems or end tensions between developed and less developed nations. It would not unravel the diplomatic snarl over marine boundaries. But it just might show the way for marine development to be oriented to long-term stability rather than a short-term economic fling, to a global goal rather than a political boundary of the moment.

Atlantic coastal industrialization, exemplified by this plant, has become a fighting issue.

By Paul Desautels

Majestic jewels find a new setting at Smithsonian

A dazzling exhibit will open this month combining jewelry that bedecked royalty with modern pieces that are fit for a queen

Threatened by the onset of the revolution, the world of Marie Antoinette was crumbling around her. In June 1791 the desperate Queen and her family fled from Paris in disguise but, in Varennes, they were captured. It is recorded that, in the haste of sudden flight, the Queen had had the presence of mind to bring along her favorite earrings. Based on the value of the earrings alone, the Royal Family could have been quite comfortable had the escape plans succeeded. The large diamond in each of the earrings weighs approximately 36 carats.

The mine from which these great diamonds came is unknown—perhaps the ancient diamond fields of India or even the Brazilian deposits which had first come to world attention in 1725. (It was not until more than three-quarters of a century later that African diamonds appeared.) Whatever the original source, any predictions at the time of the revolution as to the ultimate resting place for these incredibly valuable gems would have taxed the powers of the most sophisticated crystal ball.

They now lie in all their glory in the Hall of Gems of the Smithsonian's National Museum of Natural History, the gift of Mrs. Eleanor Close Barzin. There the common people, whom Marie Antoinette had such trouble understanding, can approach and see their hidden secret: The two great diamonds are not perfectly matched. In the French Court no casual observer seeing the stones, one on each side of her head, would ever have known the difference, nor in those days

The platinum mountings are recent—exact duplicates of the original silver ones—but the two 36-carat

diamonds once glittered below Marie Antoinette's earlobes and accompanied her on her flight from Paris.

Seventy-one emeralds glow amid sparkling diamonds on a necklace that an Indian maharaja may have worn.

would anyone have particularly cared, since they were less fastidious about gem-cutting perfection in her day than we are now.

The Marie Antoinette earrings are part of a new exhibit of "Jewelry Fit for a Queen" which opens this month. Several of the objects in the exhibit are so dazzling that these nearly unbelieveable earrings will have to struggle to hold their own bit of attention. Consider, for example, two pieces of jewelry that were once the property of Marie Louise, second wife and Empress to Napoleon Bonaparte.

Though Napoleon's first wife, Josephine, was notorious for her extramarital affairs, his reason for having the marriage annulled was that she bore him no heir. In 1810 he married again, this time to Marie Louise, daughter of Emperor Francis II of the Holy Roman Empire and grandniece of Marie Antoinette. And when Marie Louise bore a son in 1811, Napoleon loaded her with many gifts, including a diadem of silver set with 950 diamonds weighing 700 carats and a king's ransom in emeralds. The original silver and diamond diadem is intact, except that the emeralds were removed at some time and replaced with 79 cabochons of fine turquoise weighing 540 carats. About a century and a half after Napoleon's gift of appreciation, the diadem was acquired by the late Mrs. Marjorie Merriweather Post, who gave it to the Smithsonian.

For the same natal celebration, Napoleon also gave

Photographs by Lee Boltin

Grateful for the gift of a son, Emperor Napoleon responded by giving his new wife, Marie Louise, this silver tiara set with 950 diamonds as well as emeralds (since replaced with turquoise cabochons).

his Empress a necklace laden with 172 Indian or Brazilian diamonds, weighing 275 carats and mounted in silver. It, too, was eventually acquired for the Smithsonian by Mrs. Post.

As Marie Louise was nearing her fiftieth birthday, in 1840, a new crown was being made in St. Petersburg for the wedding of Marie Alexandrovna to the future Czar Alexander II. It was to be small, lightweight and feminine, but worthy of an empress in its richness (see p. 40). At a time when the world was peppered with kingdoms being joined, divided, conquered and rebuilt, there was a steady demand for rich, gem-studded coronation regalia and miscellaneous items of court jewelry. Crowns came and went—they were made, repaired, modified, taken apart and designed anew. The gems they contained were, of course, so valuable they would be recycled.

So it was with the new nuptial crown. Most of its 1,535 diamonds weighing 283 carats were once part of a rich diamond belt dating from the time of Catherine the Great, a century before. Marie Alexandrovna was the first to wear the nuptial crown. It was worn again when Marie Feodorovna married Alexander III, and for the last time by her daughter-in-law Alexandra Feodorovna when she married Nicholas II.

The imperial nuptial crown will appear in the Smithsonian's display just as it looks in the portrait, by Laurits Tuxen, of Nicholas and Alexandra that hangs at Buckingham Palace in London. Eventually Mrs. Post acquired the crown for the Russian collection at her home, Hillwood, which is now part of the Smithsonian Institution.

Important gems and jewelry follow wealth. With the collapse of kingdoms and changing distribution of wealth, the modern owner of newly made as well as old pieces of "jewelry fit for a queen" is more likely to be a very rich private citizen of almost any nationality. In recent years the Smithsonian has been blessed with a series of remarkable gifts of such jewelry from several wealthy friends and benefactors, some of whom prefer to remain anonymous.

High place among such gifts must be given to a 38-carat emerald set in a ring heavy with fine diamonds (see p. 43). The emerald is, without doubt, the finest on public exhibit anywhere in the United States and

The author, mineralogist at the Museum of Natural History, has written on gemstones for SMITHSONIAN.

Mounted in silver, its 172 diamonds glittering richly against a ghostly backdrop of natural quartz crystal, this necklace was another gift to Marie Louise to celebrate Napoleon II's birth.

perhaps the world. Considering its exquisite color, clarity, size, cut and proportions, this priceless gem could well become a standard for excellence in large emeralds. It is so fine as to be unique.

Another emerald piece is a mysterious necklace, yet another gift from Mrs. Post (see p. 37). Little is known of its origins except that the entire design is Indian. All of the exposed metalwork is encrusted with tiny diamonds that cause it to coruscate in moving light. The bold and somewhat masculine-looking necklace, with its 24 large tumble-polished emeralds of good color and 47 smaller emerald beads, could well have been draped around the neck of a maharaja.

Anyone making detailed mental notes of the jewelry mentioned here could conclude that only the "big four"—diamonds, rubies, sapphires and emeralds—were eligible for regal jewelry. Traditionally, this is true. Most gem literature and most gem merchants still refer to these as precious gems and everything else as semiprecious. There is little reason for it, but tradition is strong.

Breaking with tradition, two pieces of jewelry included in the show contain other gems as well as the "big four." One is a five-inch opal brooch, an anonymous gift, in the form of a peacock with a folded tail. The body of the peacock is a superb 31-carat black

opal from Australia with a brilliant play of colors. Head, neck and gold filigree tail are liberally embellished with highest quality "precious" gems. The head, for example, is a fine, faceted blue sapphire with diamond beak and comb.

The other piece is a jeweled evening bag, the gift of Mrs. Augustus Riggs IV, daughter of Mrs. Post. Over a platinum frame a silk cloth bag was constructed and the silk covered with hand-sewn seed pearls at the rate of approximately 100 to the square inch. The frame itself is trimmed with small carved leaflets of ruby, sapphire and emerald as well as tiny diamonds. Used personally by Mrs. Post, for whom it was made,

Five-inch peacock brooch has a body made of black opal and a host of stones in its head, neck and tail.

Mrs. Post's evening bag (above). Seen below is a jeweler's-eye view showing part of initials in diamonds and about 130 seed pearls in just over a square inch.

Superb nuptial crown, made for Marie Alexandrovna, graced heads of two subsequent Russian empresses.

the bag bears what were then her initials, M.P.D., set in diamonds.

In so glamorous an exhibition, every piece is a show-stopper. One such is a pendant necklace (left) containing an extraordinary rich blue sapphire from Ceylon. Called the Bismarck Sapphire because it was donated by the Countess Mona Bismarck, it weighs 98.6 carats. The pendant is set with small diamonds and suspended from a thin, diamond-covered ribbon.

Another show-stopper is the ruby-and-diamond bracelet (below) which more than makes up for a general lack of rubies in the Smithsonian's Gem Hall. Assembled in 1951 at Harry Winston, Inc., the bracelet is made of platinum, trimmed with 86 African diamonds. But the rubies dominate the assemblage. They

One of two sapphires in exhibit is a Ceylonese stone of nearly 100 carats, mounted with diamonds.

Amid African diamonds of this platinum bracelet, 31 irreplaceable Burma rubies give off a red fire.

were once part of an older piece belonging to the same owner, who had them reset in the bracelet and then later gave it to the Smithsonian anonymously. The 31 extremely fine Burma rubies in the matched set could not be duplicated from the limited supply in today's gem market.

Most of the famous crowns and regal jewelry that have survived the destruction of revolution and political change are now lost or locked up in national treasuries, but many are still in circulation. And now some of these royal decorations—along with some modern pieces of similar lavishness—have come to a dazzling rest in the Gem Hall of the National Museum of Natural History: a remarkable assemblage of ornaments fit for a queen.

The 38-carat stone in this ring may be the finest emerald on display anywhere in the world.

By David Snell

Texas Longhorns, 'natural' cattle, make a comeback

It's not just to keep alive a romanticized past; ranchers have relearned that this breed is easily raised and makes good beef

In the cattle country of south Texas, kids are brought up to believe in the Texas Rangers, the spiritual benefits of Tex-Mex cooking and the plain gospel truth of *anything* in print in praise of the glorious Texas past.

So it is understandable that consternation churned like a dust devil the other day in the mind of 12-year-old Michael Scott, whose daddy, Walter B. Scott, breeds registered Texas Longhorn cattle on the spread-out Copa de Vino Ranch south and west of the historic town of Goliad. What caused Michael's consternation was the latest arrival in a children's educational book series to which he subscribes. The new installment was about Texas, and, of the great cattle drives of the post-Civil War period, it said: *"The old Texas Longhorn, now bred out of existence,* was the hero of these legendary 1,000- to 2,000-mile drives" (Michael's italics).

From where Michael sat in the ranch house, he could look out a window and see a dozen fine, sleek Texas Longhorns. They didn't look extinct but very much alive. Why, just recently, Michael, his father and several of their rancher neighbors had decided to give the herd a brief trail-drive workout. They saddled up and drove the steers out the gate and a mile up the highway to the old Presidio La Bahía, which was established by the Spaniards in 1747 (at right). It was here that Colonel James W. Fannin and his 342 men surrendered to Mexican forces during the Texas Revolution and then were executed. And it was here that the cattle industry really began and, for many years, as the book said, that meant Longhorns. It may mean more Longhorns in the future.

It is said that the saber-toothed tiger went out of business because of the very thing that made him famous—he couldn't open his mouth wide enough to use those long fangs. But happily for the Texas Longhorns, their trademark works no such inconvenience. In fact, they are remarkably efficient cattle, which is

one of the reasons that the beef industry is seeing them with new respect. As a case in point, consider their adaptability to a changing environment. A lot of the lush grassland where the Texas Longhorns thrived in their heyday has long since grown up in mesquite thickets. That works some kind of hardship on the *Bos taurus* cattle breeds of European and British Isles origin, such as Charolais, Shorthorn, Hereford and Angus. Because of feeding habits acquired through many centuries on the meadows of their former homelands, these cattle are often referred to by ranchers as "lawn mowers." Texas Longhorns, on the other hand, are accomplished "rustlers" and "browsers" even on the sorriest of hardscrabble terrain.

Incredibly, their horns don't seem to get in the way at all with this kind of browsing. Rancher Scott will

Photographs by A. Y. Owen

Walter Scott raises Texans as well as Texas Longhorns. Flanked by father and mother, Mary Elizabeth, at ranch entrance sign are (from left to right) Michael, 12; Richard, 11; Eric, 10; Anthony, 9; Stephanie, 7.

tell you that one of the finest sights in the world is to see a big old cow or steer careening through a thicket a rattlesnake would feel cramped in, and banking its head like a soaring bird, never knocking into a tree or even a twig, as if the horn tips (see cover) had radar.

Columbus brought Spanish cattle to Santo Domingo on his second voyage to the New World, in 1493. In 1521 Gregorio de Villalobos brought descendants of the Columbus stock into what is now Mexico. There were no fences and the herds fanned out all over. Meanwhile, new bloodlines entered the picture, introduced haphazardly by fighting bulls brought over directly from Spain, and by strays. As chromosomes paired off and genetic characteristics relating to survival began to assert themselves, the Texas Longhorn evolved. It is estimated that upwards of ten million Texas Longhorns were driven up the north trails between 1866 and 1890.

The main reason the trail drives came to an end was not the problem of cramming those big spikey horns into railroad cars, as has been said. It takes a Texas Longhorn a good many years, at least a decade, to grow horns you'd begin to consider specimen quality. Cattle that are raised for beef would normally reach market long before that. The problem was fencing. As more and more farms and ranches blocked off the trail routes, the railroads expanded and became easier to get to. No longer was there a special need for cattle that could endure the rigors of a long drive.

Herefords, Angus and Durham (Shorthorns) had been introduced with their larded bodies, fat-marbled meat and docile ways. They could make it to the local rail siding just fine and folks were pleased with steak that had not been case-hardened on the trail. Little or no effort was made to replenish the Texas Longhorn herds that had been drained off by the big drives. The result was that, during the first two decades of this century, the Texas longhorns *did* come very close to extinction. At low ebb their numbers were far fewer than the buffalo (bison) of the Great Plains had ever diminished to. They might surely have joined the saber-toothed tiger in oblivion but for a handful of ranchers who kept a few for old times' sake.

In 1927 Congress appropriated $3,000 to save the Longhorns. Two U.S. Forest Rangers were sent to south Texas to tour the ranches. After an exhaustive search, in which they were helped by an old-time Texas Ranger and rancher named Graves Peeler, they acquired three bulls, 20 cows, four calves and three steers. These went to the Wichita Mountains Wildlife Refuge in Oklahoma.

For some curious endocrinologic reason, steers grow longer horns than either cows or bulls. The three steers wouldn't do much for the future of the breed, but they were magnificent specimens and, if any member of Congress happened by, he couldn't help but feel better about spending that money.

The herd thrived. After nine calving seasons the Wichita Mountains Refuge was able to provide foundation stock for a second herd which was placed at the Fort Niobrara National Wildlife Refuge in Nebraska in 1936. It also started selling breeding stock for many private herds at auctions still held each September.

Two of this year's Longhorn calves square off, in play, for a characteristic butting match.

Meanwhile, in the early 1930s, Texas had got into the spirit. Oilman Sid Richardson approached the late author J. Frank Dobie, who had written lovingly of the Longhorns, with an offer to finance a preservation effort. At that time the chance that any stray Longhorns could be found out on the range seemed about as likely as discovering a surviving dinosaur.

Dobie went to Texas Ranger Peeler, who reckoned he'd see what he could do. To the delight of the sponsors, he turned up 30 cows and three bulls, all fine specimens. He kept ten cows and one bull for himself. The remainder were donated to the State of Texas. Their descendants are still maintained today in parks and refuges, including the Lyndon B. Johnson State Park opposite the late President's ranch.

Walter Scott's business is raising Texas Longhorns. As 42 he is a medium-built, sun-crinkled man, all whipcord and guitar wire in his arms and springy in his step. His eyes are what old-timers used to call gunfighter blue. If you go with him and count the cattle in view (you don't ask how many cattle a rancher has), and guess at the probables out yonder somewhere in the mesquite, you can figure four or five hundred.

Walter is the immediate past-president of the Texas Longhorn Breeders Association of America, formed ten years ago by some breeders who had gone to the Wichita Mountains Wildlife Refuge for the auction. The main purpose was to establish criteria and a system of registry. They first had to agree on just what a Texas Longhorn is. In addition to the horns, typical characteristics include long, powerful legs. Most important, in the cow there should be the distinctive "rafter" slope to the hips, like two sides of a gable roof, and a feature which cattlemen call the "fishtail." This refers to a small dip in the back, three or four inches long, immediately in front of the dorsal part of the tail where it docks with the body. The "rafter" hip and "fishtail" are believed to be importantly related to the Texas Longhorns' ease of calving, as are the lightweight and string-bean dimensions of the calves.

One characteristic for which there could be no standard is coloration. Texas Longhorns come in an astonishing variety of colors, in all degrees of richness and all possible combinations and patterns.

The authentication of a cattle breed is a nebulous thing in the United States. There is no formal proclamation. By custom, a breed becomes "official" when the U.S. Department of Agriculture decides it is economically important enough to be a breed, instead of a strain, and lists it in one of the periodic updatings of its *Farmers' Bulletin* on beef or dairy cattle. It generally takes a long time and a lot of controlled breeding. Three centuries of freewheeling bovine bastardy cannot be backtracked, but as anyone could plainly see, there really *was* such a thing as a "gen-u-wine" Texas Longhorn. So the Longhorn Breeders Association simply chose to say, in effect, Lo, let there be a breed. One day Walter Scott would coin the phrase, *"the natural cattle,"* with all that that implies about fitting right in with nature's world.

A Longhorn calf is not only cute but lightweight,
a factor in the ease with which they are born.

In the association's founding year, 1964, there were fewer than 1,500 certifiable Texas Longhorns, about half of which were in wildlife refuges and municipal zoos. Since then, as an indicator of the quickening pace of the Longhorns' return, the association has registered a total of 5,380 cows, 1,151 bulls and 794 steers. There are perhaps another 1,000 qualified animals whose owners have never sought to register. And the figures do not include this spring's calves or unbranded short yearlings.

In a nation that has between 126 and 128 million cattle, that is hardly what you'd call a population explosion, but it does put Texas Longhorns back in business as a viable enterprise. The roster of the association has grown from small beginnings to 325 active and associate members, many breeding Texas Longhorns commercially, and not all of them in Texas.

More than a Texas phenomenon

One of the best-known breeders is the artist Darol Dickinson of Calhan, Colorado. He bought his first Texas Longhorns in 1965, more or less to use as picture props, and has since built an excellent commercial herd. The northernmost operations, which say something for the hardiness of the breed, are those of two Canadian ranchers: Leslie L. Sailor, who runs a herd at Williams Lake, British Columbia, and Robert Bergevin of Montreal. Besides these, there are active or associate members in many other states from California to Massachusetts—and at least one in Australia.

For all their romance with the cowboy past, cattlemen are very much with it when the matter is money—as it generally is in the beef business. A Texas Longhorn may look picturesque out there in the pasture, but if profit is at stake, esthetics don't amount to a hoot. So the way a hard hombre like Walter Scott got hooked on Texas Longhorns reveals a lot about the comeback of the breed.

Walter's daddy was an automobile mechanic back in the days before they got rich and stopped making house calls. From his earliest childhood Walter dreamed first of owning a horse and then owning a ranch to go with it. Very, very methodically he set about making the dream happen. He put himself through Baylor University and went into business in Corpus Christi as an independent oil geologist. He did well. In 1960, when he was 28, he got married and bought his first piece of land. By 1964 he had phased out of oil altogether.

The first cattle he bought were Herefords; before long, he was spending a considerable part of his time doctoring pinkeye and performing obstetrical services and commiserating with cattle he suspected of being hereditarily homesick for bucolic olde England. He

Scott inspects a bull's implausible headgear, one reason why walls of the cattle chute must be built at outward angle. For endocrinologic reasons, steers' horns grow even longer than bulls' horns.

The author uses approved way of getting attention. Although he wrote about the artist, Rothko, in SMITHSONIAN, he handles "Texian" as well as his good friend, H. Allen Smith (May 1974 issue).

began to wish he had triple-majored in veterinary medicine. And taken a residency in animal psychiatry.

"One day I was driving down the highway," he tells it, "and over there in the pasture I saw some Texas Longhorns. They were beautiful! Not just beautiful Longhorns, but beautiful cattle. It occurred to me I had never heard of anybody doctoring a Longhorn—or having to pull a calf. So I told my wife, 'You know, Mary Elizabeth, it might be interesting to own two or three, just to look at.' "

So he bought a few head, joined the new association as a charter member—"and the more I looked at those Texas Longhorns, the higher the regard I felt for 'em."

One of the most important things happening now is that the Texas Longhorns are stirring up the scientific community. Perhaps the most outspoken scientist is Dr. Stewart H. Fowler, an animal geneticist and director of research at Texas A & M University's agricultural experiment station at Uvalde. What triggered his interest was a visit he made to Scott's Copa de Vino Ranch six years ago, when he was head of purebred beef research at Louisiana State University. It was his first encounter with a big Texas Longhorn operation and he marveled at the appearance and vigor of Walter's wineglass-branded herd. He now argues that the fertile Texas Longhorns are walking reservoirs of desirable genetic traits. One such quality is the apparent resistance of Texas Longhorns to a wide variety of diseases as well as external and internal parasites. Old-time cattlemen have told Dr. Fowler of seeing Longhorn cows safeguard their calves during outbreaks of dreaded screwworm infestation—by cleaning scratches and cuts on their offspring to remove any larvae that may be present. Dr. Fowler also thinks that Texas Longhorns can genetically teach certain other breeds a thing or two about foraging, especially where the luxury of a green carpet underfoot is unknown.

Meanwhile, the beef industry is showing new inter-

est in the Texas Longhorn's performance in the ledger books. One weight-gain comparison was reported this spring from the Ideal, South Dakota, Beef Center. Matched against assorted other beef breeds in a 112-day feeding test, two Texas Longhorn bulls showed an average daily gain of 3.304 pounds. This compared well with 3.3 pounds for the tested Red Angus, 3.4 for Beefmaster, 3.8 for Charolais and so on. The industry likes fast growth in an animal, because the longer the growth period the higher the cost.

Longhorn meat is lean and red. Streaks of "marbling" fat in the muscle tissue and heavy layerings of back-fat are not characteristics of the breed. To some people this means that Texas Longhorns are not for the faint of jaw. But the old notion that "marbling" is what makes for tenderness does not entirely check out.

There are indications that the USDA may soon review its whole system of grading meat by fat content. Beef fat has long been on many doctors' no-no list for heart patients. Recently a new alarm has been sounded: There is speculation about a relationship between diets high in beef fat and cancer of the colon, one of the nation's most common forms of the disease.

So the Longhorn may come back as an important beef cattle product. For now, a sizable number of Walter Scott's customers are ranchers with the same impulse he initially had. They want Texas Longhorns just to look at. That suits Scott fine. He believes that in actual ranch performance a Texas Longhorn is its own best advertisement—and that to see one is to want to know more.

One thing really nettles him, though. That is when some fellow member of the association makes excuses to other cattlemen. He has seen it happen. "Oh, I keep a few of the po' ol' good-for-nuthin' things around just for the kids and out of the kindness of my heart," this hombre will say. Such moral cowardice makes Walter Scott want to call in the Rangers.

By Richard Blodgett

New fad: cast-iron seat collecting

They come from plow, seeder and hay rake and are now such desirable items that buyers pay in three figures to own a rare one

Donald Sites, cast-iron-seat king, displays some of his duplicate seats at Iowa convention.

Laurence McCuen of White, South Dakota, found a Minnie Harvester Co. plow seat last year in a junkyard in nearby Milbank. He bought it for $12. He says he doesn't know exactly what its resale value would be, but he isn't interested in selling—at any price. Ridiculous? Not when you know the market for old cast-iron farm seats and you realize that only one other collector, besides McCuen, is known to have a Minnie Harvester.

Like antique weather vanes, rifles, comic books and the cast-iron counterweights from old windmills, farm seats are booming. Seat collectors are movers and shakers—some 30 of them recently journeyed to Atlantic, Iowa, where they gathered at Van's Chat & Chew Restaurant and organized the Cast-Iron Seat Collectors Association. That get-together was only a small part of the first National Cast-Iron Implement Seat Collectors Convention, which ran for two days at the local 4-H fairgrounds. One collector came to Atlantic all the way from New York, looking for bargains. He was last seen boarding a plane for the East lugging a stack of five seats, each weighing about 20 pounds.

Two or three years ago, collectors could take a pleasant Sunday afternoon drive through the countryside, stopping at farms and junkyards to socialize and buy up all the seats they could find. They cost about a dollar or two each, and some farmers were happy to give them away. No more. The rarer seats now fetch $200 or more; plain ones bring in $10 or $20. Farmers and junk dealers have caught on and won't sell cheap.

Farmer sells while plowing

Donald Sites (left), a cattle rancher and farmer from Grinnell, Kansas, is the Number One cast-iron-seat man. Last year Sites tried Canada after the supply started to dry up in the States. On a back road near Wroxeter, Ontario, he spotted a farmer using a horse-drawn plow, stopped the car, went to have a look, then offered to buy the plow seat for a few dollars. The farmer was tickled, and stripped it right off. Sites and his family drove off, wondering how the man was going to finish plowing that field. As for the seat, it was a Boag Wroxeter, now worth between $150 and $200.

Scarcity determines the value of a seat—not beauty. A "named seat" is what everyone hopes to find. That's one whose manufacturer's name—Boag Wroxeter, for example, or Peru City Plow Works—is made part of the design. They're like signed lithographs. Perhaps half a dozen collectors have been able to amass more than 200 different named seats. Don Sites has 350 different designs and about 170 plain ones. Harlan Brander of Spring Valley, Illinois, has 295 named and 150 plain seats. The Brander and Sites families have become good friends because they keep dropping by to see each other's treasures when in the neighborhood. Virgil

Scattering of varied seats shows different names and designs—all factors in determining value.

Most cast-iron seats date from 19th century; many were recycled in World War II scrap drives.

Once considered rare, "M" seats like this have appeared often enough to lower the price.

Rare old Vandiver seat is worth at least $300. Its owner displays it in his living room.

Photographs by Leslie Segal

Cast-iron farm seats

Only eight or ten Excelsiors are known to exist. Photographer Segal found this one for $5.

Litke, a wheat farmer from Marion, Kansas, says seat collecting is a wholesome activity that the entire family can enjoy. Litke's got about 140 different named seats. Out of these, he notes, only two of the named manufacturers are still in business under the same name: J. I. Case and Deere & Co. Litke's collection has led him into making modern cast-iron seats. Mostly, they're mounted on pedestals and sold through magazine advertisements as decorative furniture. Prices for personalized seats range from $35 to $55.

Original models for cast-iron seats were carved from wood by local artisans. Often the name of the implement company or the seat designer or the town of manufacture was cut through the seat like intricate lacework, the spaces between letters serving as ventilation holes. When the wooden model was finished, it was turned over to a local foundry. A sand mold was made of it, and the iron was then cast. An authentic wooden model would be a rare gem for any collector, but none has turned up so far.

The earliest cast-iron seats were probably produced in the 1860s. Production peaked in the Seventies and Eighties and faded rapidly after the turn of the century. By 1920, manufacturers were mass-producing pressed steel seats and the cast-iron days were over.

It wasn't until six or eight years ago that the first collectors became interested in seats. Brander bought his first ones to weld onto the tops of milk cans to make bar stools. Sites got started when someone offered him a seat in exchange for some samples from his barbed-wire collection (SMITHSONIAN, March 1972).

Some collectors, less affluent than the big ones, complain that they are being squeezed out of the market. "I can't hardly afford the things any more," says Donald Skidmore of Knob Noster, Missouri. He won't join the association and says he's going to concentrate on his own collection—of tractor engines.

This intricately patterned seat was "stolen" from a name brand—copied with name eliminated.

Grand Detour seat is lovely but too plentiful to command a high price from collectors.

The Mercedes-Benz 450SL. Spoil yourself.

This is no conventional 2-seater. It's a Mercedes-Benz. So, you expect the extraordinary. You won't be disappointed.

Technological triumphs are the norm in sporting automobiles. Unfortunately, the same cannot be said for creature comforts. Happily, the 450SL breaks this convention.

Standard equipment includes electric windows, air conditioning, power-assisted steering and brakes, automatic transmission—even a central locking system.

Pure pleasure

Women who hate cramped sports cars will appreciate the ease of entry and exit of a 450SL. Whether in evening dress or a brief skirt, ladies remain ladies.

Orient yourself in the cockpit. Tailor the height and back angle of a formfitting seat to your body. Turn the key.
Listen.

wheel mates the standard radial tires to the road. Marvel at the road feel the variable-ratio, servo-assisted steering transmits. And drive secure in the knowledge that a double-circuit, 4-wheel disc braking system is at your disposal.

410-Mile cruising range

One more thing. You can enjoy the precision and response of a 450SL

without the annoyance of frequent fuel stops. According to the latest strictly supervised fuel mileage test results from *Motor Trend* magazine, the Mercedes-Benz 450SL averages 17.3 miles per gallon.

Motor Trend drove the car in a series of actual driving situations on a 73-mile course of regular city streets and highways. The figure they got gives the 450SL a cruising range of 410 miles. A truly remarkable automobile.

Presence...and split personality

This extraordinary automobile has an undeniable presence. And a split personality.

With the convertible top in place, it takes on the lean look of a jet aircraft. With the removable hardtop on, instant coupe. With no top, the outdoors is yours. Practically three automobiles in one.

The no-gimmick styling is an exercise in function. The crisp lines of the rear deck accommodate your golf bag and enough luggage and miscellaneous gear for a holiday for two without difficulty.

There isn't another engine in the world like this alloy 4.5-liter, fuel-injected, overhead cam V-8 which powers the 450SL. A special 3-speed automatic transmission was designed to complement it. Shift it through the gears manually or let it do the changing automatically. The choice is yours.

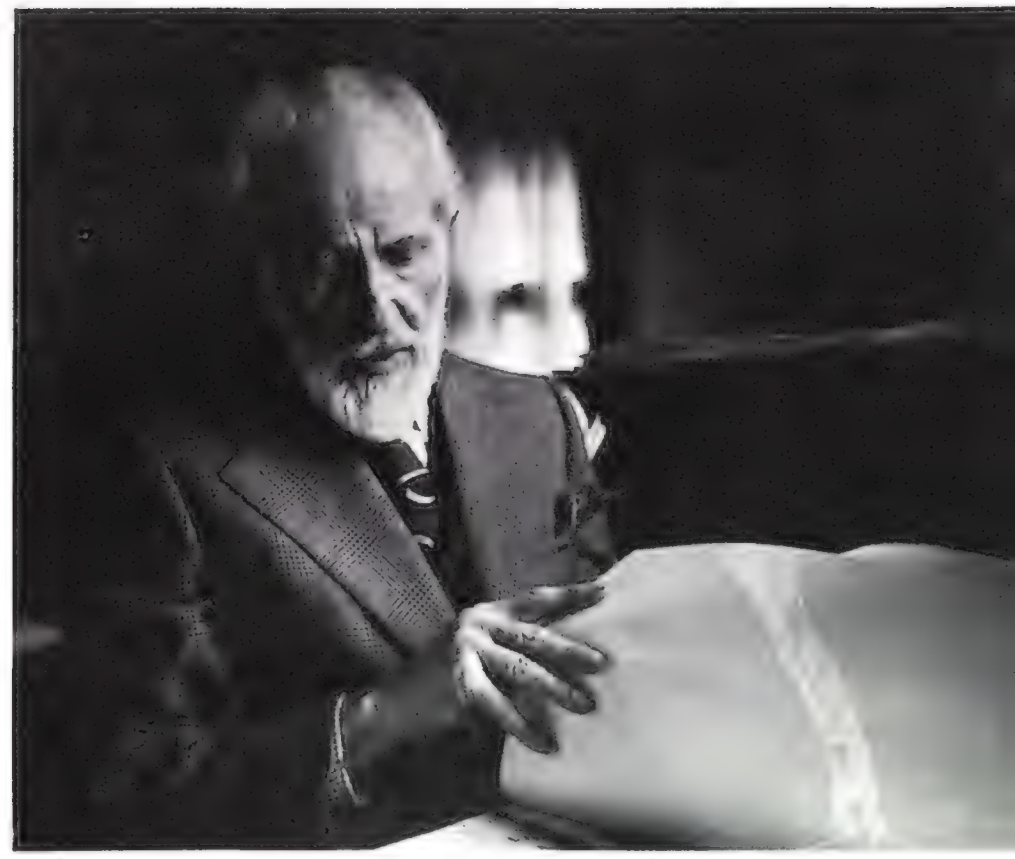
Now challenge your favorite stretch of country road. Feel how a separate suspension system for each

Mercedes-Benz

By John Russell

Painter Tobey, at 83, still has a way with a line

The Smithsonian's National Collection of Fine Arts pays tribute to the American abstractionist and his 'white writing'



In his studio in Basel, Switzerland, Mark Tobey leafs through a batch of recent lithographs.

Mark Tobey would stand out, anywhere in the world, as one of the last of the authentic, unreconstructed 19th-century Americans. Everything about him makes that point: the old-fashioned fine looks, the formula-free habits of speech, the actor-manager's command of gesture with which he will stand at a street corner as if searching for the passage of blank verse that will most effectively bring the traffic to a halt.

Yet when all that is said, how many contradictions remain! This quintessential American, with his rare feeling for the patterns of American speech, has long lived abroad, latterly in a city where he understands barely a word that is spoken around him. In everyday life, as in his work, he is much concerned with mystical states of mind; but if he chooses to speak out in conversation, he sounds like a veritable Harry Truman. He lives in a big, square-built fortresslike house in the old quarter of Basel, Switzerland, and he is as much at home there as he once was in Shanghai—or in the vanished England of 40 years ago.

Tobey cannot be typed. In terms of American painting, Tobey is one of the great survivors: He saw the Armory Show in 1913, and took his ideal of female beauty from Charles Dana Gibson. But he is also unexpectedly, repeatedly and unarguably up-to-date; time and again a Tobey of many years ago will turn out to bear closely on the current concerns of painting.

Tobey's most characteristic style is essentially calligraphic—a gossamer network or skein of lines, which many among his following refer to as "white writing." But it never does to think that we have the measure of Tobey; in the paintings of the last few years, for example, there are pictures with a new slashing boldness about their handwriting, as in the wildly angular and dissonant lines of *Coming and Going* (opposite).

Tobey is as resourceful a colorist as any man now living. But his fundamental instrument remains the line. Tobey's line has a motor energy all its own; no sooner does it seem to offer us a recognizable form or a known shape, than it has moved on—defying us to halt it. "It's a type of painting," Tobey says, "in which you are not allowed to rest on anything; either you're bounced off it, or you have to keep moving with it."

Perhaps the best brief estimate of Tobey's innovative power was made as early as 1944 by art critic Clement Greenberg, when he described the effect of Tobey's white writing: "The calligraphic, tightly meshed interlacing of white lines which build up to a vertical, rectangular mass reaching almost to the edges of the frame; these cause the picture surface to vibrate

Mr. Russell, former art critic of London's Sunday Times, *is now with the* New York Times. *He wrote on neoclassical art in* SMITHSONIAN *(January 1973).*

In the manner of a jazz improvisation, a skein of energetic lines weaves in and out of *Coming and Going* (1970), an allover composition with no focal point.

Albright-Knox Art Gallery, Buffalo, N.Y., Charles Clifton Fund

Metropolitan Museum of Art, Arthur H. Hearn Fund, 1942

Private collection

Except for the letters and numerals, *Ghost Town* (1965) bears little resemblance to an urban landscape.

in depth—or, better, toward the spectator. Yet this seems little out of which to compose an easel painting. The compensation lies in the intensity, subtlety and directness with which Tobey registers and transmits emotion usually considered too tenuous to be made the matter of any other art than music."

Like most artists of international stature, Tobey is no stranger to awards and honors. In 1958 he won first prize for painting at the Venice Biennale and, since then, he has had numerous retrospectives, notably in New York, Paris and London. The latest comprehensive exhibition, a "Tribute to Mark Tobey," currently appears at the Smithsonian's National Collection of Fine Arts (through September 8). About a third of the 70 works in the show date from the last ten years, and some of them have never been shown before in the United States. (After Washington, the exhibition will travel to the Seattle Art Museum.)

After he had lived for years in Seattle, people thought of him as a mid-Pacific man. He was believed, that is to say, to have a special relationship with the Orient and with Oriental art. And it is perfectly true that Chinese calligraphy, Japanese poets, Zen Buddhism and the meditative life-style of the East have meant a great deal to him. But when he made a big decoration for the Seattle Opera House in the 1960s, it turned out to be truffled with local references and made up of a heterogeneous mix of pure painting, fragments of monotypes, printed matter of many kinds, postage stamps and a magazine photograph of Queen Elizabeth II on a horse. Seen from a distance, these constituents lose their identity and lead a new life as a "Tobey." A similar mélange—with labels and postage stamps—appears in *Hidden Spheres* (p. 61).

Where others trim their personalities to suit their environments, Tobey has always kept his intact; and he has his reward in the inner consistency which binds his work together. Nothing about him is irrelevant, least of all the place where he was born and reared.

In *Broadway* of 1936, Tobey produced a fairly representational scene: big-city life at night, ablaze with lights and teeming with traffic. The contour lines prefigure the abstract "white writing" of later years.

He was nimble and self-reliant

Mark Tobey was born in Centerville, Wisconsin, on December 11, 1890, and from 1894 to 1906 he lived with his parents in the little town of Trempealeau, Wisconsin. Trempealeau stands on the Mississippi, a short way north of La Crosse, on a particularly noble sweep of the river.

Trempealeau is midmost America, and Mark Tobey's father was a midmost American, of the kind who can turn his hand to many things—farming, carpentering, house-building. Young Mark lived "the life of a barefoot boy," nimble and self-reliant in his relations with nature. He was by turns swimmer, skater, fisherman, botanist, and he saw his future—again by turns—in terms of the Congregational Church, taxidermy, storekeeping, biology and zoology. His parents kept him on a light rein in such matters and there seemed no hurry for him to make up his mind.

All that was changed when, in 1909, his father became too ill to work and it fell to Mark Tobey to find some way to make a living, fast. The family moved to Chicago; and Tobey has been, ever since, a student of the metropolitan scene. He doesn't always like what he sees—in fact, he likes it less and less—but he has kept something of that primal amazement with which he greeted the fact that there really were many people in the world, and that so many of them had come to-

gether in one place. For many years, learning and living took all his energies. Some of the learning was unsuccessful; there was never much likelihood that he would succeed as a mechanical draftsman, a shipping clerk or a blueprint boy, although he accepted them all as interim occupations.

What he did have, and what then commanded a ready market, was a gift for setting down the look of other people on paper, and for doing it with just that grain of wit, or of poetry, which makes for memorable looking. He can still do it, for his own pleasure; but in the early years of this century he did it to order, and editors soon knew him as a man who could be relied upon. By 1911 he was doing well enough to set up in New York as a straightforward portrait draftsman.

It wasn't quite *Tobey*, even so. In graduating from commercial, or near-commercial, art to something more exalted, he was part of a living American tradition—at one with William Glackens, Everett Shinn, John Sloan and George Luks. But he took much longer than they did to get around to it. In terms of time and location, and in terms of his ultimate ambition, Mark Tobey was one of those late and slow developers who have counted for so much in modern art (Mark Rothko, Barnett Newman and Jean Dubuffet are other examples). He had to get everything right, and without reneging on what he had been before. It was as if he knew, by instinct, that he would be about forty before he found his whole self in his art.

He was active throughout the 1920s in all kinds of ways: traveling to England, France, Spain, Greece, Turkey and what is now Israel, teaching art, studying the Bahá'í World Faith (of which he had been an adherent since 1918), selling his caricatures, working incessantly with whatever materials lay at hand. Yet the artist, the quintessential Tobey, was somewhere else.

What was that quintessential Tobey about? Well, as early as 1920 he had experienced what he called "a violent desire to break and disintegrate forms, and to use light structures rather than dark." He had an intimation that "minute forms or patterns" would play a great part in his art. So, too, would what he called "dimensionless dimension": a quality which he had noted in the work of the great English visionary painter, J.M.W. Turner. He knew from his studies of Oriental calligraphy that it is possible for a painter to think with the brush; and, in some way as yet undefined, he wanted to rethink the traditional categories of space and form and time, as they applied in art.

The Museum of Modern Art, New York

Edge of August (1953) suggests the transition between summer and fall, the moment at which one season with its own gamut of colors takes over from another.

Hidden Spheres (1967) has richly textured surface with thinly brushed paint that partly obscures collage elements, such as paint labels and postage stamps.

Collection Mr. and Mrs. Winslow Carlton, New York

It was a big program, and it called for the total integration of Tobey's experience. Every aspect of his nature had to play its part, from the otherworldly to the sardonic, and from the solitary to the metropolitan. The whole world and the whole of human life were somehow to be got into the picture.

What Tobey wanted of his art was something that would be infinite in both the literal and the metaphorical sense. It would have no beginning and no end, no focus and no dimension. He knew, with the scientists, that "there is no such thing as empty space. It's all loaded with life," and he wanted to share with others his own awareness of space as "a kind of living thing . . . like a sixth sense."

Tobey finally broke through to this in paintings based for the most part on the experience of city life. City life presents, ready-made, a spectacle of the utmost vivacity and complexity. Tobey's own paintings of cities are portraits of pullulation. In *Broadway* (p. 58), one of his best early examples of this new, fulfilled painting style, Tobey retained only enough circumstantial detail to remind us that the picture derived from the direct observation of life. Not until some years later, in the early paintings of Jean Dubuffet, was there anything like this in European art. In life, the nearest thing to the experience of a Tobey painting is the experience of a ticker-tape parade, when the whole space before us is crisscrossed with fugitive shapes which form and reform themselves continually. When Tobey saw color photographs of John Glenn's triumphal progress along Fifth Avenue, he said "I never saw so many Tobeys!"

Eventually, he trusted to the movement of his hand to produce an allover, abstract structure which worked by itself, with no direct reference to the world before us. But even then there was a continuing concern with the look of things, the difference being that that concern expressed itself indirectly. *Edge of August* (p. 60), for instance, could suggest a microscopic world of dancing particles or, perhaps, a telescopic view of a solar flare.

In Greenberg's essay, the date matters as much as the discernment. In the year 1944 only a very few people understood what later came to be called action painting (or abstract expressionism). Greenberg wrote on a later occasion that whereas Tobey's white-writing pictures were shown in New York in 1944, Jackson Pollock did not make his own first allover paintings till the late summer of 1946. In other words, Tobey was first with the kind of defocused painting in which motor energy spreads itself across the whole area of

Tobey used a combination of oil, ink and crayon in *Sagittarius Red* of 1963. The canvas has the scale

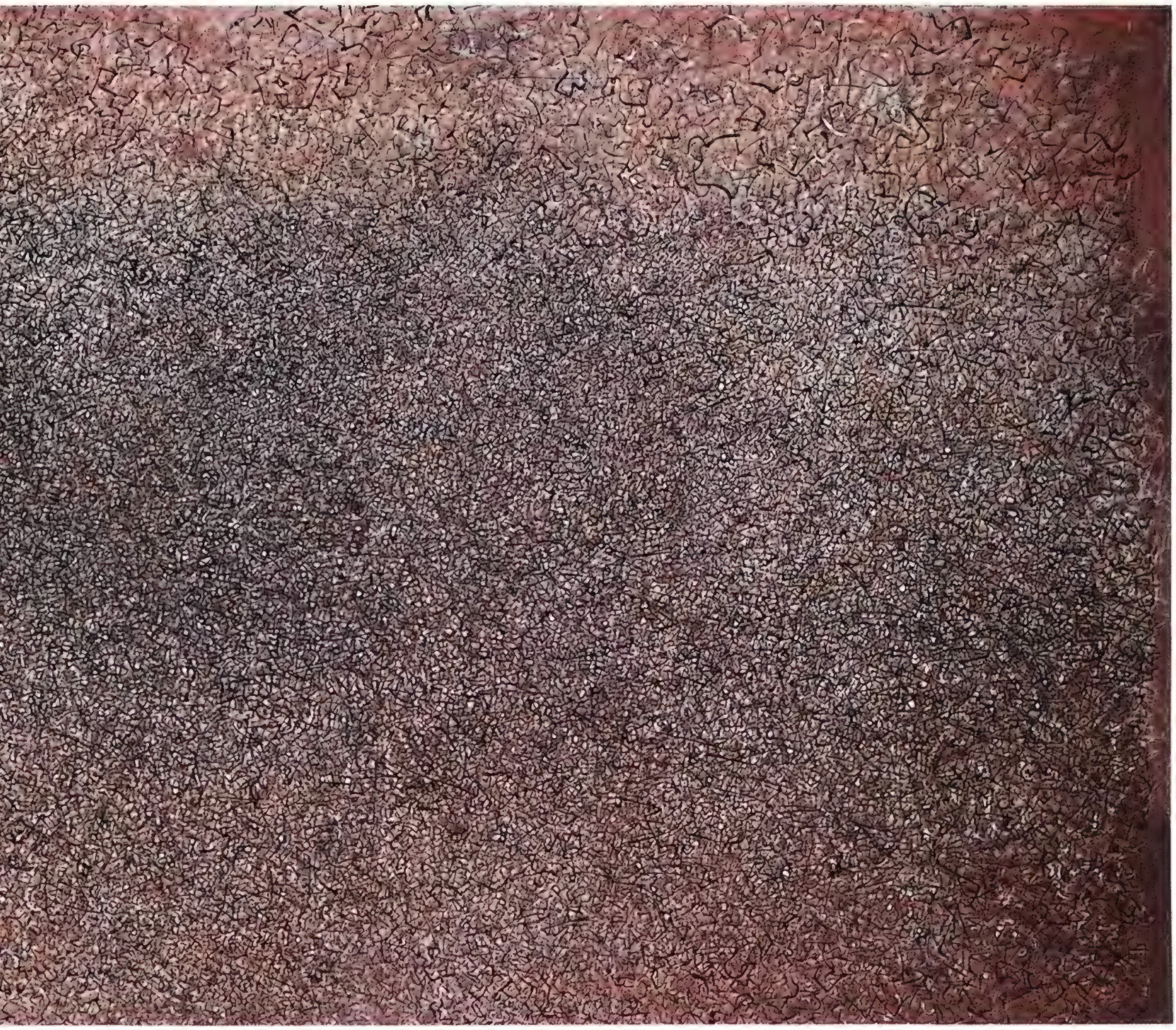
the canvas with no concession to conventional ideas of composition. But it was never Tobey's ambition to be "first" with anything.

Tobey has chosen a way of life which puts him physically and geographically in the margins of art history. Where American painting is concerned, the running has been made over the last 30 years by artists who lived primarily in New York City, where an elaborate machinery of scrutiny and appraisal went to work upon them. Tobey, by contrast, lived in faraway places and was believed to paint only small pictures of a vaguely uplifting sort. In point of fact, his *Sagittarius Red* (below) of 1963 is more than 12 feet wide, big even by the standards of abstract expressionism.

He has many gifts—not least for poetry, and for the composition of short piano pieces. There is no one Tobey whom we can simplify and two-dimensionalize. The world which he sets before us in his late paintings is one in which nothing has been lost or forgotten from his experience; it is also one in which nothing is stated directly. The paintings stand for energy, continuous change and instantaneous readaptation. It is a great moment for all of us when Tobey the moralist joins hands with Tobey the magician.

of abstract expressionism, but manner of execution is Tobey's own, worked out inch by sedulous inch.

Kunstmuseum, Basel



By Gregory Thorp

Its glory vanished, vast Cincinnati terminal bows out

A multimillion-dollar showplace celebrated the might of our railroad network; now deserted and stripped, only its rotunda still stands

Cliff Vaughan flicked off the radio, kissed his wife and carried a lunch bag out to the Model A. Broadcasts warned that the river was still rising—one of the worst floods in Cincinnati's history. After parking on Freeman Avenue, Cliff waded in hip boots to a chain of baggage wagons provided as a walkway to the portal. Guards welcomed him inside to the usual echoes of carpentry. A crew on scaffolds was installing modern lettering over the lunch counter. Cliff tramped past empty newsstands and unopened ticket windows and boarded a sparkling elevator. He had been transferred from downtown duties to become acquainted with track layout, switch tending and routine procedure in the control tower. "Kelly and I were sittin' up here like you and I are now. Then a foreman come stormin' up them stairs: 'Why in the goddam hell ain't you answerin' the phone?!! We gotta bring coaches in here!' "

With that reveille, the colossal Cincinnati Union Terminal was unofficially baptized March 19, 1933.

Downtown, locomotive fireboxes were flooded; frantic employees evacuated one of the most inconvenient rail facilities of any city in America. But a mile to the west, Union Terminal rose 35 feet above saturated Western Avenue. Henry M. Waite, chief engineer of the project, "witnessed the proof of a theory."

Today, 40 years later, Cincinnati Union Terminal has all come down except its mighty rotunda building, which may be purchased by the city of Cincinnati and used as a multipurpose transportation center or for city government offices. The destruction of the station symbolizes the end of railroading's golden age—just at a time, ironically, when wistful thoughts of a resurrection of the rails are in everyone's mind.

In 1928, magnates from seven proud railroads, local politicians and officials of the business community agreed upon a building site for their dream terminal and awarded the contract to architects Alfred Fellheimer and Steward Wagner. Industrialists, seeking to perpetuate Cincinnati's theme of "gateway to the North, South, East and West," urged a structure that would replace five gloomy depots and establish the Queen City's "truly metropolitan rank."

Ground was broken in August 1929. Nearly 300 acres had been appropriated for the esplanade, station, 21 subsidiary buildings and railyard. Colonel Waite told Cincinnati the labor demand was "sufficient to give employment to every man who wants a job." With $41 million assured to negotiate more than 300 con-

Tracks are torn up where Union Terminal's concourse stood. The semidome now faces an uncertain fate.

Smoke-belching locomotive, symbol of railroading's splendor, pauses at the terminal in its early days.

tracts, the Colonel probably lit an indifferent pipe at news of the market crash.

By 1931 Laurel Street had been widened into a 3,000-foot boulevard and relandscaped in line with proposals for a "beautiful approach" which could "help wonderfully in selling Cincinnati to the traveling world." On November 20, Mayor Russell Wilson stepped from a flag-draped podium and bent over to apply mortar from a silver trowel to the bed of the station cornerstone. Joyous bombs were fired from Central Union Tower. A musical program included a few bracing solos from Mrs. Ruth Best. Contractor James Stewart stepped to the public-address system and assured the citizenry that the building would be standing firm "in 2031 or 3031." Claudette Colbert and Gary Cooper were playing in *His Woman* at a downtown movie, while typesetters prepared the financial page: "Old Lows Are Broken Through . . . a total of 47 issues established new bottom levels, including the New York Central . . . Union Pacific . . . and Pennsylvania" railroads.

Through astute loan negotiating by Robert A. Taft, work was not impeded by the condition of the national economy, nor was it restrained by building codes. Millions of bricks and tons of limestone and terra-cotta went into a ten-story semidome.

For a lively solution to the demanding interior of a quasipublic building 700 feet in length, the architects engaged two internationally recognized designers, Pierre Bourdelle and Winold Reiss. In several hundred separate sections of linoleum and wood carving, aluminum design and airbrushed oil paintings, Bourdelle created jungle scenes for lobbies and rest rooms, fruit and vegetable decorations for the restaurants.

Reiss' heroic murals would overlook meetings and partings in the cathedral space of rotunda and con-

course. Foreseeing dirt from steam engines puffing under the concourse, Reiss chose mosaic for its brilliance, durability and ease of cleaning—and agreed to deduct the cost of the glass tesserae from his payment.

The resulting treatment was the largest collection of mosaics in the United States. It formed a cordon of towering figures celebrating a nation's struggles to get somewhere else. The parade of vehicles, led by a Blackfoot dog travois, prototype of the prairie schooner and woodburning locomotive, ended with the dirigible and skyscraper.

On the last day of March 1933, when dedication of the mighty structure finally took place, technological advances and Roosevelt's sweeping reforms combined to offer new hope and new habits. Movies featured trains and train stations featured movies. But there were now transcontinental air routes established by the "Big Three" carriers, and in the years since 1929 rail patronage had fallen off 46 percent while airline patronage increased 300 percent.

The Depression spurred massive road-building, a favorite government way to create jobs. There were a million trucks operating in direct competition with rail freight—which was traditionally the big money-maker for railroads, anyway. Greyhound buses sprinted from city to city. After some years of abstinence, jalopies and sleek roadsters hit the road again, to roll up more mileage in 1933 than in 1929. In Cincinnati, when someone saluted Union Terminal and predicted thousands would come, Daniel Willard, President of the B&O, retorted, "Yes—in automobiles."

On a night in its heyday, the terminal epitomized both a city and a nation engaged in a two-front war: Redcaps, ticket agents and waitresses watch over their scattered flocks under the reverberating echoes. The concourse seethes with arrivals and departures. A special guard is summoned to the platform: Mrs. Eleanor Roosevelt has arrived and quietly insists on waiting for her next train in the concourse. A shifty-eyed pickpocket notes the movement of the guard and returns his attention to the young sailor gazing at one particular girl near the departures board. Two young women slip into the beauty parlor, hoping to use the idle time to cosmetic advantage before making connections.

Cabbies chat in the cool night air. The bleat of a

Vermont photographer Gregory Thorp has been capturing Union Terminal's Art Deco for three years.

Giant rotunda displays the mosaic murals of Winold Reiss, extending a total of 210 feet.

Fearing locomotive soot, Reiss chose mosaic over oils; some of his art has gone to the airport.

coal barge reminds a pensive bus driver of the fishing he. . . . Suddenly trucks and trunks arrive behind him: The Redlegs are taking their five-game winning streak over to St. Louis on the "National Limited." Coaches, families and batboys file into the cavernous rotunda. Back on ramp nine, burly police persuade a drunk to discontinue a fight. Soldiers yawn against barracks bags.

Mrs. Roosevelt, seated next to her secretary at Gate Four, looks up from her knitting to a commotion of reporters and photographers parading through the rotunda toward her. The special guard swallows his embarrassment and steps out from the wall to intervene. The bellowing monotone of the public address system announces a departure for "Ashland, Kentucky; Huntington, West Virginia; Charleston. . . ." The press veers off to converge on Gate Seven, where flashbulbs and squeals capture a young celebrity. He rolls out of the concourse, like another ball in the pinball machine. "White Sulphur Springs, Clifton Forge, Staunton, Charlottesville. . . ." The guard retreats and exchanges a wink with the secretary. ". . . Manassas, Alexandria and Union Station Washington, at Gate Four."

At track level the air is rich with curling steam. The rail yard coordinates water towers, ash pits, overtime, mailbags, loafing, bent spines, thirst and screeching wheels with the movement of hundreds of cars night and day: troop trains, ice shows, cowhides for tanning, Bing Crosby, strawberries, machine-gun guarded POWs, gold, the newlyweds and the flag-draped.

Soon after the capacity crowding of the war years, the throngs under the vast dome fell off sharply. Customers were given new locations for traveling and loitering. Still in her twenties, Union Terminal was called Cincinnati's white elephant, dying of poor circulation, losing millions of dollars annually and needing a new caretaker. Chalking only two arrivals each day in 1972, Amtrak withdrew to a plastic box a mile away. Representatives of the seven railroads seeking to disown the dying station filed application with the Interstate Commerce Commission.

The terminal is now "on the wrong side of the tracks." Its smoke and roar caused the neighborhood to slide into poverty and neglect. Pigeons, roosting on the arms of the facade clock, murmur with the monotony of the droning interstate highway 200 yards away.

Crippled by regulations and the strengthening competition of air, truck and pipeline, railroads were driven into truck operations on their own—even before

Detail from murals shows three Blackfoot Indians meeting the leader of a pioneering family. They appear in the front rotunda panel which depicts a parade of history of America and transportation.

Construction engineer Henry M. Waite and terminal company founder George D. Crabbs appear in a mural detail between the rotunda and waiting room.

the terminal opened. The Southern Railroad purchased terminal property for expanding truck facilities. A spirited fund-raising effort, led by Alfred Moore, saved the rotunda structure, along with the concourse mosaics (for reinstallation in the expanding airport). Forty-one years after the flood, Cliff Vaughan, senior train director, peered through the same tower windows as bulldozers removed the last salvage from the passenger concourse. It was demolished before the remaining $9 million of the mortgage had been paid.

In the nation where the fastest and the latest count most, "modern" is short-lived. New developments often replace rather than complement each other, so the temples become tombs. How can a Parthenon be a permanent part of a society when the wealth and energy that it represents is dependent upon profit making and technological change?

The lonely rotunda dome remains. It is a silent memorial from the years when we believed our energy resources would always increase from one generation to the next. Standing on the vast, dusty terrazzo, one understands what Henry Miller felt, 30 years ago, when he looked upon America not "as young and vital but rather as prematurely old, as a fruit which rotted before it had a chance to ripen. The word which gives the key to the national vice is waste."

Conceived in the intoxicated Twenties and born in the evening of the railroad age, Cincinnati Union Terminal is only middle-aged but already done for. The problem facing Cincinnati symbolizes one of the illnesses that disrupt our present society: There is no room for Grandma. So she is treated like a discarded pop bottle along the parallel routes of Indian trail, wagon road, canal, railroad and highway. Amputated and silent, her cavernous rotunda is reserved mostly for meditation, and the 21 caretakers remaining from the original 2,200 await its new fate.

Into history rolls ironically named "Modern Limited" above empty schedule board. John Lester (opposite) was an engineer on Southern when terminal was built.

By Rudolph Chelminski

A tiny remedy for Dutch traffic

A computer-operated system of odd-shaped little cars may become the best way to get around the bustling city of Amsterdam

For the past few years Amsterdamers have grown accustomed to the sight of a vehicle that resembles a transparent beer can on wheels, zipping silently in and out of the bedlam of their downtown traffic. At the wheel was a long-haired young man wearing wooden shoes and a parka. If they laughed at first, they did so less and less as the maelstrom of automobiles choked the city more thoroughly with every passing season.

Today, in the shadow of the oil supply crisis, they are not laughing anymore. They are looking very hard at Luud Schimmelpenninck and his Witkar. Schimmelpenninck is an unusual man—a 38-year-old engineer, he is also a free-lancer in transportation remedies.

Briefly, the Witkar (white car) system would be a semipublic rent-a-car service limited to the central core of Amsterdam, using small electric two-seater cars of Schimmelpenninck's own design. The complete system for the downtown area, as Schimmelpenninck envisages it, will consist of 150 stations and 1,200 cars. Strategically spaced throughout the city at present bus stops, the stations would combine the functions of parking (holding up to ten cars in each, snuggled one behind the other like so many toys) and quick-charging for the storage batteries via an overhead rail onto which each car locks as it enters the station's track.

A Witkar Union member would stick a special key into the cylindrical selection pole and turn a drum to select the next station, "booking" a parking spot there. If parking space were available at his intended destination, an ignition key would slip out of another slot and he simply would drive away in the car at the head of the line. If there were no parking available at his chosen station, the computer would signal him to choose an alternative stop nearby.

When the subscriber pulls away in the first car, the computer's "meter" would immediately begin ticking off the minutes in use, billing handled automatically through Amsterdam's municipal postal banking system. During his trip the Witkar driver could hold onto his vehicle as long as he liked (at a cost of about four cents per minute), and park at the curb as he shops. The computer has already made certain that his igni-

Inventor Luud Schimmelpenninck pleads the case for his system of battery-driven Witkars (white cars).

A Witkar, its inventor at the helm, moves silently among the usual heavy traffic on Vijzelstraat.

tion key is the only one which will make the car go. The "meter" stops ticking only when he has arrived at his destination, locked his car into the station and returned the ignition key to the cylinder.

The silent and relatively cheap Witkar (about $2,700, batteries included) has a wheelbase roughly a meter and a half square, and, when parked in a Witkar station, would take up only a quarter of the space a normal European car does.

According to calculations by the Faculties of Industrial Science at Rotterdam and Delft, the entire network would cost no more than 15 million guilders, or about $5.5 million, which is approximately the cost of a Dutch 1,000-car parking garage. By comparison, the final costs of the controversial subway under construction in Amsterdam are estimated at 1.5 to 2 *billion* guilders. Of course, such comparisons are not exactly in order; the two systems have entirely different functions. "We're not even considering transportation outside the center," says Schimmelpenninck.

He estimates that some 35,000 automobiles are parked during the day in downtown Amsterdam. Each day, except at rush hour, there are no more than 1,600 automobiles in use at any given moment. (There are also some 12,000 people, at the same given moment, on bicycles, on foot or on public transportation.) Of the 1,600 cars, 15 percent are either coming directly into or departing from the center. The remaining 35 percent—or nearly 600 automobiles—in use at any given moment are stopping and starting on errands in the center. This is what Schimmelpenninck calls the Witkar alternative. The remainder, including the much greater problem of rush-hour traffic, would have to be solved by other forms of public transportation.

The Witkar system, then, may seem little more than an elegant solution to a small part of the problem. But

Tiny remedy for Dutch traffic

it begins to make sense as part of a larger, regional transportation system—one in which the private automobile has a small place. Ideally, Schimmelpenninck envisages Amsterdam utterly freed from the clutter of private automobiles, the streets filled only with pedestrians, bikes, Witkars and such civic necessities as delivery trucks, fire engines and police cars.

Schimmelpenninck first began to work out the system in 1967, when he was serving a term on the Amsterdam city council, but his fellow legislators were not interested. Left to go it on his own, Schimmelpenninck founded the Witkar Cooperative Union (installing his wife as administrator) and built his first prototype. He held the first street trials in 1968, and their attendant publicity brought the first curiosity-seekers into the Union. There are about 1,500 members now, each of whom has paid basic dues of 50 guilders (a bit under $20) for lifetime affiliation. The first station was opened in March with five cars in service. According to a plan worked out with the minister of environment, Schimmelpenninck hopes to have 35 cars and five stations by March 1975. The national government now seems interested.

There is good reason for the new interest in Witkars. Each one, it is calculated, will use only one-fourth of the energy consumed by a normal gas-eating automobile. As he strides through Amsterdam, clunking his wooden shoes against the cobblestones and glowering at the traffic, Schimmelpenninck touches the parka he is rarely without. It is made of polyester, an artificial fabric derived from petroleum. "Now that," he says, "is what all that oil should be used for."

Like car owners all over, Schimmelpenninck buffs his Witkar in front of his Amsterdam residence.

You can take pictures or you can *make* pictures

Whether or not you're traveling less these days,* you probably know better than some that in a backyard, in a nearby park, just off a familiar path, there is plenty to see and appreciate. Somehow a camera in front of your eye forces you to take the trouble to see the beauty just right.

The result helps fit it all into place, and it needn't be stowed away for just an occasional showing. Big prints in color bring in the real world to make the place where you live beautiful. The satisfaction of making them yourself can add considerably to the pleasure.

For a start in that direction, send a self-addressed envelope prominently marked "A3-75" to Kodak, Dept. 55S, Rochester, N.Y. 14650. We'll send you a guide to Kodak literature for all levels of photographic experience. Or a photo retailer can recommend a photo lab with a reputation for quality in color prints of generous size.

*At Spokane, Washington this summer, we are at Expo '74 to preach the doctrine "Know the land and the people" with few words and such imagery as above. Public transportation is available from far and near. It's a World's Fair with pavilions from other nations, entertainment, and celebration of the natural environment.

By Timothy Green

Captive breeding offers a last chance for rare pheasants

Reared by bantam hens on an English farm, birds of endangered species are being returned to their natural Asian habitats

The pheasant has long been admired as one of the most beautiful birds in the world—and by some as one of the best to eat. Unfortunately, such virtues are driving it toward extinction. Not only is it a favorite on menus everywhere from its original home in Asia to Europe and America, but its spectacular plumage has often made it a sought-after trophy. The pheasant's future is being further undermined as the primeval forests of Asia, the remaining natural haunts of all except the maverick Congo peacock pheasant, are being rapidly depleted. Today no less than 16 of the 48 species of pheasant are threatened with extinction.

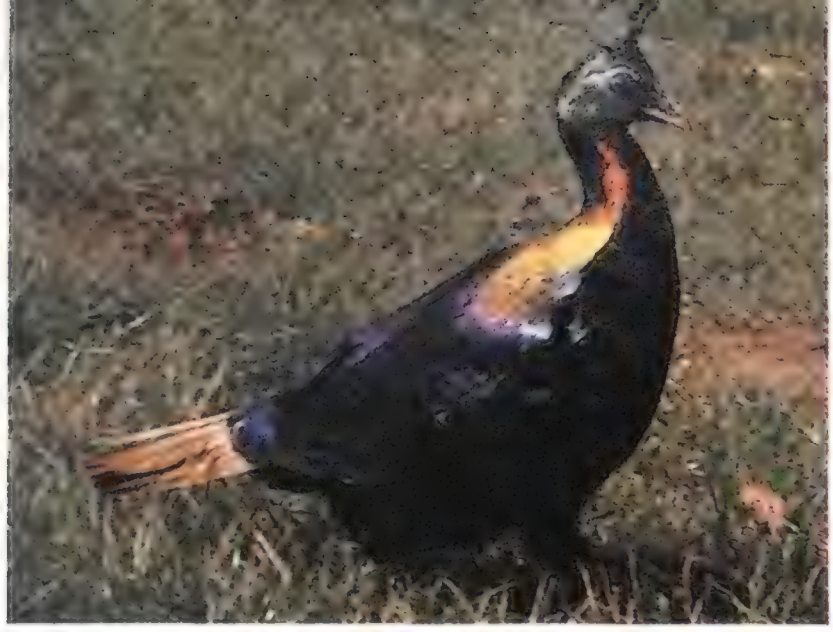
Their fate, however, is not yet sealed. And a casual conversation late one night in 1957 between John Yealland, then curator of birds at the London Zoo, and Philip Wayre, a British naturalist and maker of wildlife films, who was already maintaining a private collection of pheasants, has undoubtedly helped. As Wayre tells it now, "Yealland said, 'Somebody ought to do something about pheasants,' so I did."

In 1959 he created the Ornamental Pheasant Trust (since renamed simply the Pheasant Trust) as a nonprofit organization devoted to the captive breeding of pheasant species threatened with extinction, with the aim of producing them in large enough numbers so that their natural habitats eventually could be restocked. Jean Delacour, the world expert on pheasants, who maintains his own fine collection at Clères in Normandy (SMITHSONIAN, November 1971), agreed to become the Trust's president. Wayre offered his own

For SMITHSONIAN, *London-based Timothy Green has written on King Tut's treasures, Gerald Durrell's wildlife trust and Royal Astronomer Burbidge.*

An Indian peafowl stalks haughtily past visitors to its paddock at the Norfolk Wildlife Park, a venture that helps support the Pheasant Trust in Great Britain. The peafowl, also of the Phasianidae family, is not endangered but many of the pheasants in the Trust are.

Photographs by Terence Spencer



An iridescent Himalayan monal pheasant, used to living at 9,000 to 12,000 feet in a mountain home, thrives in the very different English climate.

The common koklas is widely distributed in the Himalayas and is not considered endangered, but it was rare outside Asia until bred at the Trust.

This Swinhoe's pheasant may be shipped to Taiwan to bolster the dwindling population there. Some 192 have been raised by Philip Wayre at the Trust.

farm near the hamlet of Great Witchingham, near Norwich in Norfolk, as a home for the Trust, and his 11 species of pheasant as a breeding nucleus.

From this relatively humble beginning 15 years ago, the Pheasant Trust has now become the largest and most comprehensive collection of pheasants in the world, embracing 34 of the 48 species. Of the 16 species listed as "endangered" in the Red Data Book of the International Union for Conservation of Nature and Natural Resources, six are breeding regularly at Great Witchingham.

As Wayre and his manager, Roy Grout, showed me around one day, we came first upon a family of four golden-brown Cabot's tragopan chicks, just one month old, being fussed over by an old broody bantam hen on the rearing lawn. Nearby, Grout had just transferred a tiny mikado baby and three blue eared pheasants that had hatched during the night into an electrically heated coop on the lawn. The staff was coming in with the morning's collection of a couple of dozen new eggs that they had found on their rounds of the adult pheasants' pens.

"Many of the pheasants are easy to mass-produce," said Wayre. "We could breed six of the 16 species in the Red Data Book in such large numbers that they wouldn't need to be in the book anymore. The problem is to persuade the authorities in their own countries to take them all back in proper preserves."

Some pheasants are fussy

Not all pheasants, however, are so amenable. The Trust has not yet prevailed upon its brown eared pheasants from northern China and Inner Mongolia to breed regularly; only five youngsters have been raised. The problem with these capricious birds is that they like to choose their mates carefully, and simply will not oblige with just any brown eared of the opposite sex, with whom they may be casually caged. The females produced 46 eggs last year, but not one was fertile. These cases of infertility are due to the lack of new blood in the captive stock. With the exception of two males sent to the London Zoo in 1866, almost all the brown eared pheasants in Western Europe and elsewhere today are descended from a male and two females sent to Paris from Peking in 1864, although some fresh stock has started to come in.

Wayre's first task back in 1959 was to build up a strong breeding stock by obtaining new birds from the wild to supplement these and other inbred strains already in Britain. His initial coup was to obtain a pair of Swinhoe's pheasants from the interior forests of Taiwan. Until their arrival, the few around had been bred from a single pair brought to Europe, like the last brown eareds, in 1866. The fresh blood proved

highly successful; over the years the Trust has bred 192 of these pheasants.

More new stock came from Kenneth Searle, a Trust member in Hong Kong. He spent a vacation in Borneo where he succeeded in trapping the Bornean great argus, one of the largest pheasants, and some greater Bornean crested firebacks. Shortly afterward, Searle met a Chinese dealer with connections in Peking, who offered him five males and two females of the rare and spectacular Cabot's tragopan, found only in the mountains of southeast China. Last April Searle helped obtain from the Peking Zoo two pairs of the endangered white eared pheasant caught in the wild.

A brown eared pheasant, or "Hoki," one of seven at the Trust that have failed to breed. It is now rare in its native areas of northern China and Mongolia.

Stalking the rare species

Another Trust member, Fred E. Johnson, determined to get some Hume's bar-tailed pheasants from the Naga Hills on the border between Assam and northwest Burma. This pheasant was almost unknown outside Burma, and has never been in captivity in the West. But Johnson prevailed upon an Indian dealer in Calcutta to make a search, and gave him an advance for his expedition. The man disappeared into the jungles and no more was heard for many months. Then Johnson got a cable saying the dealer had caught seven Hume's bar-tailed pheasants. They were flown to Britain. Johnson bred them himself for a season, and then presented a pair to the Trust, where more than a hundred have now been reared.

Hume's bar-tailed is another endangered species. More than 100 have been bred at Great Witchingham, and five pairs have been sent to the Rangoon Zoo.

Wayre himself has sought out some of the rarer species, one of which turned up surprisingly near home. He chanced upon a rather seedy-looking pair of common koklas in a dealer's shop in London, among a motley assortment of birds just in from India. He promptly bought them and took them back to Great Witchingham, very doubtful that they would survive. Yet within weeks they had settled in and, although accustomed to Himalayan altitudes, seemed to enjoy the cool climate and lush grass of Norfolk. Then, one day, the female vanished from the pen. After an exhaustive hunt, Wayre found her under some fir boughs sitting on seven eggs. Within 26 days all had hatched, thus establishing the common koklas at the Trust.

Venturing farther afield, Wayre traveled in 1971 to the Kaghan Valley, 10,000 feet up in the Himalayas on the Pakistan-Indian border, in search of the Western tragopan. This pheasant has been hunted almost to extinction in the mountain valleys because of the male's beautiful plumage. Wayre promised local villagers rewards for any Western tragopans they could bring in from the remote valleys. Already this "pipeline" has produced a male and female, but the male died shortly after arriving in Britain. So the lone female, the only Western tragopan known to be in cap-

Vietnam, natural habitat of the Edwards' pheasant, was heavily damaged during the war, but the breed is well established in England and America.

The Trust has bred several hundred cheer pheasants, such as this one, for restocking in their native India and Nepal and also in a Pakistan national park.

Mikado pheasants such as these (the female is at left) are among the best breeders at the Trust. They are to be restocked in the mountains of central Taiwan.

The Siamese fireback roams wild throughout eastern Thailand, Laos and Vietnam, but adjusts to captivity quickly. It is not considered endangered.

tivity, waits for a mate while the species teeters on the brink of extinction.

Although most pheasants adapt quickly to life in Britain, successful breeding calls for expert daily care. As soon as any pheasant lays an egg, it is taken away from her so that she will go on laying more. The eggs are then stored carefully, for up to ten days, to build up a clutch of four or five from one species. During this time the eggs are turned twice daily to prevent the yolk from settling on one side against the shell. Once the clutch is ready, the eggs are placed under a broody bantam. According to Wayre, they give much better results, especially with the rarer species, than do incubators. The actual incubation period varies from a brief 18 days for a peacock pheasant up to 30 days for the tragopans. Up to 90 percent of the eggs from the rare Swinhoe's and mikado pheasants prove fertile, compared with about 50 percent from Cabot's tragopan and almost none from the brown eared pheasants. The crucial points seem to be whether wild stock has been imported and whether the birds settle down easily with just any mate.

Once the eggs have hatched, the chicks and their adoptive bantam mothers are moved to a small, heated coop on the rearing lawn for three weeks. The whole family is then transferred to a larger, unheated, coop for another month, before being moved into full-sized outdoor pens.

Wildlife parks and zoos take some of the birds, and the Trust's own members also buy for their private collections. But the primary goal is to match the

The plumage of the Bornean great argus looks dull in repose but makes a remarkable display when

breeding program to an overseas program of returning the pheasants to their native lands. This depends on persuading Asian conservationists and governments to provide suitable preserves for the birds.

The first breakthrough came in Taiwan. The authorities confirmed in 1964 that the Swinhoe's pheasants on the island were rapidly becoming extinct. The Trust promptly offered some of its Swinhoe's to bolster the wild population. With the cooperation of the Taipei Museum, the World Wildlife Fund and the International Council for Bird Preservation, an initial batch of 15 pairs was dispatched to Taiwan in 1967. Once they were adjusted to the steamy climate of the island, six pairs were released in a preserve in an experimental forest in central Taiwan, while the remaining nine pairs were kept in captivity for breeding locally. This initial injection was supplemented by another six pairs from the Trust in 1968. The Taiwan government was so impressed by the scheme that a new law was passed protecting the Swinhoe's and 30 other rare birds from hunters. Now there are plans to return the even rarer mikado pheasant to Taiwan.

Meanwhile, the Trust has been busy dispatching cheer pheasants to India for release in reserve forests near the old mountain town of Simla. Twelve pairs went out in 1971 and, although two were soon killed by predators, the remainder are reported to be thriving. They have not bred, however. A second contingent of 15 pairs was sent in 1972 and six more pairs in 1973. At the same time, a second batch of six pairs each of cheer, white-crested kalij and Himalayan mo-

The Elliot's pheasant has been bred in captivity in Europe and the United States for nearly a century, but is endangered in its native China.

These Cabot's tragopans (the male is at left) are part of what may be the only group now in captivity. They are endangered in their southeast China home.

he spreads his wings toward a female so that the feathers form a complete circle, hiding his head.

A Reeve's pheasant from northern China, a species marked by a tail a yard or more long, has been introduced as a game bird in some countries.

nal pheasants were dispatched to Islamabad in Pakistan to join others already released in a nearby national park preserve.

Wayre has been campaigning for several years for the Burmese authorities to establish a reserve for the Hume's bar-tailed pheasants, which the Trust has now bred into the fifth generation. As a first step, five pairs were sent to the Rangoon Zoo in 1971, but no forest preserve in the wild has yet been established.

The Trust's facilities for large-scale breeding will shortly be expanded. The Pheasant Trust hopes to move to a new home in 1975 on the grounds of a late 18th-century mansion, Ickworth House, 50 miles from Great Witchingham. Ickworth House is owned by the National Trust, which is providing a six-acre walled garden bordering on a small lake and some woodland for the Pheasant Trust.

The Ickworth facilities, especially the warm enclosed gardens, should enable the Trust to do even better with tropical pheasants, which are often difficult to breed in the chilly breezes of Norfolk. Not all the pheasants, however, will be moved from Great Witchingham. Many of the rarer species, including the high-altitude ones, will continue to be bred there, as insurance against disease striking the main collection at Ickworth.

A good part of the financial support for the Pheasant Trust will continue to come from another Wayre enterprise, the Norfolk Wildlife Park, which he operates on what once was his farm. The park grew out of the assortment of birds and mammals that he had assembled for a wildlife series on television. Unlike those that have since sprung up, Wayre's park is given over entirely (apart from pheasants) to European mammals and birds. The park now lures 112,000 visitors a year.

The most familiar inhabitant of the park to most visitors is a huge eagle owl named Bubo, who sits sleepily tethered to her block beneath a great oak tree. Wayre tamed Bubo more than 15 years ago and she regularly accompanies him on lecture tours and television shows.

Physical separation of the Pheasant Trust from the Norfolk Wildlife Park will enable Wayre to proceed with another project: an otter trust. For years Wayre has kept tame otters in the garden of his home at Great Witchingham, but recently he has bought 60 acres of parkland with a lake in Suffolk, which will shortly be established as a safe haven for otters that are also rapidly becoming endangered. "Unless we do something very fast, the otter will be extinct," he says. "Already five of the 19 species of otter are in the Red Data Book." And just as he has financed the Pheasant Trust with the help of the Norfolk Wildlife Park, Wayre plans to underwrite his new trust with a park devoted to Asiatic birds and mammals.

The pheasants, however, will not be neglected. The prospect of their new domain at Ickworth has already set Wayre scouting for two of the rarest pheasants that have so far eluded his collection—the Chinese monal that lives between 12,000 and 16,000 feet up in the mountains of Koko Nor in Tsinghai Province and western Szechuan in central China, and Sclater's monal from Yunnan in China and southeast Tibet. "The last time I know of anyone seeing a Sclater's monal was in Yunnan Province about 1944," Wayre says, "and no one has heard anything of the Chinese monal for 20 years. But our experience here with the Himalayan monals suggests that they are a tough breed which do well in captivity, and if we could get its cousins we could mass-produce them. I'd give my eyeteeth for them."

A public figure in England, Bubo, an eagle owl, has appeared frequently on television with Wayre.

Jean and Philip Wayre stroll the Park with two otter cubs; they plan another trust for endangered otters.

By Iola B. Parker

Whiskey Creek keeps running, but only with water

George Washington, in the 1790s, was last in the hearts of frontier Pennsylvanians who felt taxing whiskey was like taxing money

The bulldozers of land developers haven't yet erased all imprints of an event that took place in southwestern Pennsylvania during the 1790s while George Washington was President. The record is preserved in a few old buildings, farms and graveyards; in names of families, creeks and roads; and in the memories and archives of descendants of those who were involved.

George Washington was *not* first in the hearts of *all* his countrymen. Soon after he became President, the freedom-loving, hot-tempered, hard-working Scotch-Irish who lived beyond the Allegheny Mountains in Pennsylvania concluded that the American Revolution had merely traded the oppression of one George for that of another. Because Washington listened to his dynamic young Secretary of the Treasury, Alexander Hamilton, instead of taking the advice of more cautious statesmen such as his Secretary of State, Thomas Jefferson, the Union almost came apart in the second decade of its existence.

When our Revolution left us $54 million in debt, Hamilton decided to raise money by taxing whiskey distilling. Many national leaders were opposed to such an "excise tax" (tax on goods manufactured and used within the country), for it was just such a bite, put on the Colonies by Britain, that had been one cause of the Revolution. Hamilton, however, had a way of getting what he wanted, and the Excise Act was passed by Congress and signed by Washington in March 1791. It stirred up a hornets' nest in the Pennsylvania hills, where farmers reacted to it so violently that their protest became known as the Whiskey Rebellion.

If you take Pennsylvania's Route 51 southeast from Pittsburgh, then follow 88 as it winds on south, past South Park, through the small towns of Library and Finleyville, and on to the Monongahela River, you will pass through the heart of what was once called "whiskey country." Many frontier farmers of this region, in 1794, had learned to combine excess rye, unlimited spring water and know-how into whiskey. They found it impossible to ship bulky grain East by pack train, but whiskey kept indefinitely, was easy to store and transport and could be traded for necessities. Whiskey was the farmers' currency. The few cash dollars they could scrape together in a year went to the land speculators from whom they had originally bought their farms.

Whiskey paid for almost all of a farmer's purchases. Smoke from the stills could be seen from any point in Allegheny and Washington Counties. In the words of George Dallas Albert, a historian of Westmoreland County, "Farmers kept barrels of it in their cellars. . . . It was good for fevers, it was good for decline, it was good for ague, it was good for snake-bites." There was nothing in *materia medica* for which old whiskey didn't possess some curative properties.

The idea of paying a *cash* tax (and it had to be paid in cash) on whiskey, when whiskey itself was the medium of exchange, outraged the people of western Pennsylvania. In vain, Hamilton tried to explain that it would actually be the consumer who would pay the tax. These hill people had no way to control the retail price when they traded a keg of whiskey for an ax or a few yards of calico. Worst of all, those who failed to register their stills were required to appear in federal court in Philadelphia, 300 miles away. A man could lose his crop during the weeks he'd be gone!

Why not tax land?

Why, they demanded, had Hamilton picked on *whiskey?* Since western Pennsylvania had one-fourth of the nation's stills, this one little section would be paying off much of the entire war debt.

"It is discrimination," they cried. "Why not tax land?" The wealthier Easterners would then bear most of the burden.

Western Pennsylvanians had little in common with the East, even the eastern part of their own state. (There had been talk of making this section a separate state.) These people were getting fed up with a government run by a group of "gentlemen" with a hundred

A former college teacher and consulting chemist in Pittsburgh, Iola Parker now free-lances, specializing in western Pennsylvania's history.

Riled frontier farmers gathered to protest whiskey tax and almost tore apart the Union.

years of good living behind them and no memory or knowledge of what constituted raw pioneering—the hardships, the Indian raids and, incidentally, the tons of grain rotting away in bins because there was no way to get it to market.

They were also disenchanted with a government that kept promising to open up the lower Mississippi for a shipping lane south, promising to open up Presque Isle for homesteading, promising to send away the last British troops in the fort just over the horizon. Actually, they were not alone in their alarm at the growing power of the federal government. Prophetically, many saw it eventually swallowing up the states and their rights. Democratic Societies had been formed in most of the states to warn that the new government could be as oppressive as the old.

The Federalists looked upon these societies as dangerously radical. They forgot that only a few years ago they themselves had not only been questioning the then established order, but fighting it with all their might in open rebellion. The whole idea of a government by the people and for the people was—and would

Drawings by Peter F. Copeland

Frontiersmen learned how to combine excess rye, unlimited spring water and know-how into whiskey.

for some time remain—incomprehensible. No one, from President Washington down to the skedaddlers who had moved out to the frontier after the Revolution to avoid taxes and military service, knew how a republic should—or could—be operated.

Men such as Alexander Hamilton couldn't possibly know what whiskey meant to the back country. The East recognized it as the national drink, but it was literally the "water of life" in the west. For several years Pennsylvania had had a state tax on liquor, but it was never collected in the west. A petition from the Monongahela valley, where practically every farmer made whiskey, stated the feeling: "Why we should be made subject to a duty for drinking our grain more than eating it seems a matter of astonishment."

Six months after the passing of the Excise Act farmers elected delegates to meet in Pittsburgh to draft a protest. Radicals demanded that all excise men be "treated with contempt and denied all support and comfort," but the 11 elected delegates were among the most levelheaded members of the community against the excise and were most concerned with keeping peace. Nothing much came out of this Pittsburgh meeting but further protesting.

Meanwhile the citizens were more and more incensed and frightened by the government's steamroller technique. If *whiskey* could be taxed, the next thing might be the spinning wheels! The first tax collectors to appear in Washington County were tarred and feathered by a few of the more violent farmers, some of whom disguised themselves as Indians.

General John Neville, a well-liked and respected community leader, accepted the office of Excise Inspector for the district, hoping in this way he could keep peace with the distillers. When he set up his tax office in Washington, Pennsylvania, however, the house was raided, the tax books destroyed, and a plaque of George Washington's head shot full of holes as the frontier mob shouted, "That's the man who signed the Excise Act!"

The next summer there was another meeting in Pittsburgh. This time a protest was drawn up and sent to the President. On reading it Washington became so furious he sent back a stern warning that the law *would* be obeyed, but when Hamilton sent an eastern tax inspector over the mountains, the farmers treated his mission as a joke. He returned with the worst possible impressions of the Monongahela people. When excise officers came to the farm of David Hamilton south of Finleyville, they were welcomed with hospitality. Before getting down to business they had generous servings of Jamaica ginger laced with whiskey. David and a neighbor played the genial hosts until the officers passed out, then slipped off and hid the still. Nothing more was heard in the records of the Hamilton still, but to this day the family's place is called "Ginger Hill."

All law-breaking was not on the part of the "whiskey boys," as they were called. At least two excise officers took bribes from large distilleries and stole from the government. When federal officials ignored complaints, citizens took things into their own hands, mobbing one of the tax men, destroying his tax books, and making him promise to resign—or his house would be burned. Washington was so angry when he learned of this that he offered a $200 reward for each man.

There is no record of the reward ever being claimed.

The large distillers realized that by paying the tax they could force small distilleries out of business. This split the whiskey makers, the more radical banding together to destroy the still of every man who paid the excise. News of the French Revolution had trickled over the mountains, and there were many sympathizers with the French mob. Some began to mutter, "Tar and feathers! What we need is a guillotine!"

The situation reached the exploding point in July 1794, when General Neville and David Lenox, the federal marshal, rode out to a farm, in what is now Allegheny County's South Park, to serve a man named Miller with a writ summoning him to federal court in Philadelphia. Miller said later, "I felt myself mad with passion. I thought $250 would ruin me!" As he was refusing to accept the writ, they looked up and saw a group of determined-looking local men coming across the field toward them. Neville and Lenox turned to run, but stopped when a shot cracked a warning behind them. (The record doesn't say who fired that first shot in the Whiskey Rebellion, but a woman who lives in the vicinity swears it was her Uncle John, several "greats" back.)

Neville and Lenox left, Neville returning to his estate, Bower Hill, a few miles to the west. Angry farmers, gaining reinforcements along the way, followed. Neville challenged them and fired a shot. After a gun battle of two days that left six men wounded and one farmer dead, Neville was able to get word to the militia. A few soldiers arrived and managed to drive off the attackers.

Within a short time about 500 riled farmers, under the leadership of Major James McFarlane, a Revolutionary hero, were marching grimly toward Bower Hill. McFarlane hoped he could bring order into what was becoming a dangerous situation, but negotiations had hardly begun when someone fired into the militia and McFarlane was killed.

Whiskey became the farm currency, used in exchange for a new ax or a few yards of calico.

Horrified, and left without McFarlane's disciplined leadership, the farmers went wild. Unaware that Neville had escaped, they forced their way into the house, overpowering the few soldiers still on guard, broke into the cellar where liquor was stored and went on a drunken rampage of looting and burning. In the end they released the soldiers, but they left the once-beautiful estate on Bower Hill a charred ruin.

Down the line toward treason

Most of the militiamen had been from the Mingo Creek section south of Finleyville. McFarlane was buried in the little hillside cemetery overlooking Mingo Presbyterian Church, and it was here in the churchyard, not long after the destruction at Bower Hill, that a mixture of inflamed radicals and very worried moderates gathered for a conference. David Bradford, a local lawyer, seemed to envision himself as the "Washington of the West," who would lead a new fight for freedom. He was for complete resistance without compromise—even to the point of making western Pennsylvania a separate state, or seceding from the brand-new Union.

Fortunately, Hugh Brackenridge, a lawyer and frequent writer for the *Pittsburgh Gazette,* followed Bradford's inflammatory harangue with a speech which began on an easy, friendly note, then stated plainly the seriousness of the situation. He told the farmers flatly that since the Bower Hill incident the President now had the right to call out the army, and that there was certainly no hope of the west's winning a war with the U.S. Army. He said the only thing they could do now was to send representatives to Philadelphia to beg amnesty. Frightened and subdued, many now realized for the first time how far down the line toward treason they had gone.

Bradford was neither impressed nor frightened by what Brackenridge had said and left the meeting more determined than ever to liberate the west from federal oppression. After persuading two simple-minded fellows to rob the Pittsburgh mail and bring the sacks to him, he found letters to government officials denouncing the rebel action. Bradford thereupon gave himself the title of Major General and began recruiting a militia to fight for the Cause. As his volunteers reported, Bradford began to shape them into some semblance of an army just eight miles east of Pittsburgh. The people in Pittsburgh were terrified when

they learned that more than 5,000 hillbilly whiskey-makers were waiting only for Major General Bradford to give the word to march on the town.

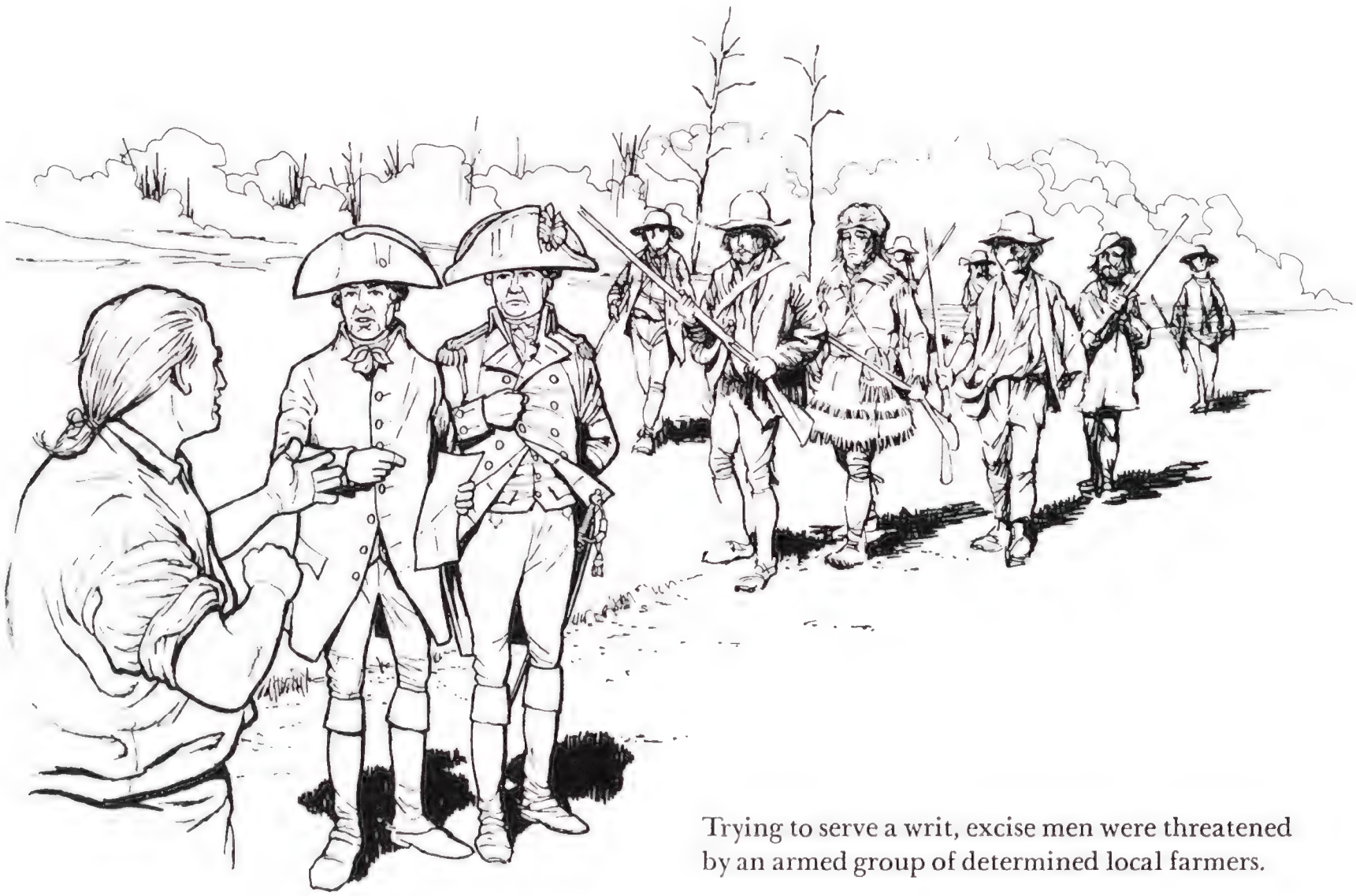
Out to camp went Brackenridge and advised that they simply "march through" to show Pittsburgh how strong, yet well-behaved, they were. Terrified Pittsburghers closed all the stores, but they shrewdly made a move which undoubtedly saved the town. They gave the invaders an all-out welcome, including whiskey by the bucketful.

Not many of Bradford's men had a clear idea of what it was all about. Some grew bored and drifted away before they got to Pittsburgh, others kept up rebel cries and went on, hoping to plunder. A few homes were looted and barns burned, but on the whole the spread of food and drink was more attractive than pillage. Bradford, cooling down, sent word to Fort Fayette that his "army" meant no harm. He spent the day lolling in the shade in his fancy uniform, bragging of his accomplishments.

President Washington made a formal statement Aug. 7, 1795 that the "Acts" of the west had amounted to treason and sent an official delegation to Pittsburgh to study the trouble. While they were on their way, the citizen's group, consisting of representatives from all western Pennsylvania counties and six from Virginia, held the meeting as planned at Parkinson's Ferry. Bradford still ranted for all-out war, but was voted down. However, when Washington's proclamation of treason was read, even the conservatives were so angry that the sanity of the group was preserved only by Brackenridge's sensible suggestion that a committee be appointed to meet and talk with Alexander Hamilton's representatives.

When the delegations met, the federal men insisted on complete submission to the excise law. Bradford held out for resistance; Brackenridge and others like him pleaded for common sense and patriotism. It was finally decided to hold a referendum when each citizen should vote "yea" or "nay" as to his intentions on submitting to the law of the United States, and every man should be required to sign a new oath of allegiance. But people were confused, and in many cases rebels prevented the voting.

Washington was conscripting an army of some 13,000 from four states—a larger force than many he had led in the Revolution—to put down what he believed to be a full-scale rebellion. Moderates tried to convince General "Light-Horse Harry" Lee, who was in command, that things were now under control, but the answer came back that the west was repenting only through fear of the army. So the army marched westward, unwilling, disgruntled, soggy with rain, cold, hungry, wading in mud.



Trying to serve a writ, excise men were threatened by an armed group of determined local farmers.

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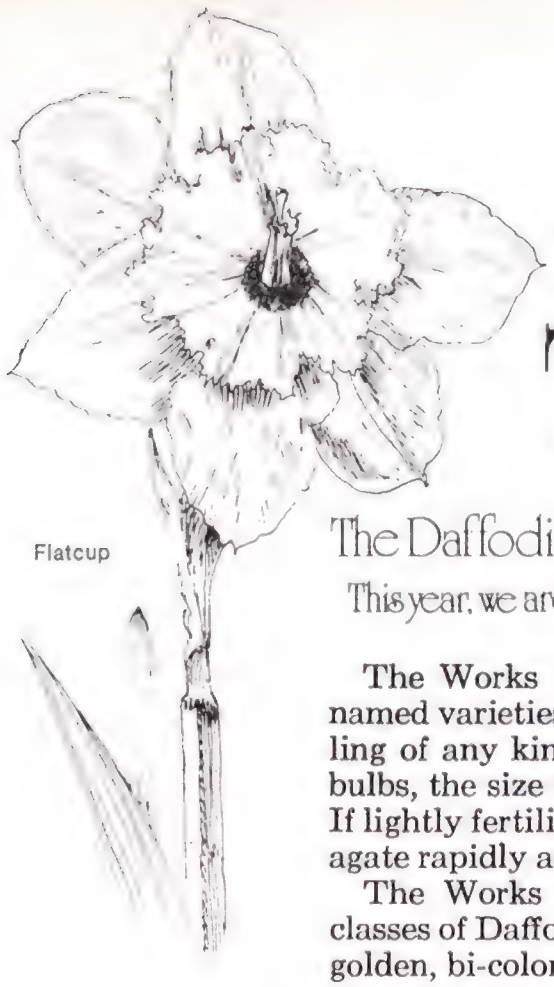

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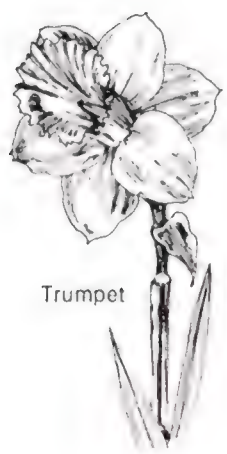
A. Pettingill



Trumpet

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Nowhere did the troops meet opposition. After reaching Pittsburgh and still finding no enemy, they became more disgusted. Rumors that the army had got out of hand were not far wrong. When General Lee required all citizens to sign a *new* oath of allegiance, the soldiers picked up people at random, assuming no one had signed. In one case 16 men were dragged from their beds and forced to run half-dressed beside mounted troops for several miles. Then they were thrown into an open pigpen to spend the night in rain and snow. After being held five days in a deserted house and a cold stockade, they were brought to trial. All were acquitted. All but two had already signed the oath. This episode was called "the Dreadful Night" in the Monongahela valley.

The man who had been itching to take on the U.S. Army in an all-out war, lawyer Bradford, escaped with a whole skin down the Ohio to Spanish territory. Eventually Lee pardoned all but 20 men. These were herded on foot over the mountains to Philadelphia, each man marching between two troopers with drawn swords. All but two were acquitted at their trial, and finally Washington pardoned even these.

Hamilton had got his wish. The federal government had met the challenge to its power by proving to the nation it *would* enforce laws enacted by Congress. East of the mountains the Federalists were more popular than they had ever been, and carried the next election with ease.

When Thomas Jefferson became President, however, one of his first acts was to repeal the excise tax. It was too late to help the small distillers in the Monongahela valley. Their business was already

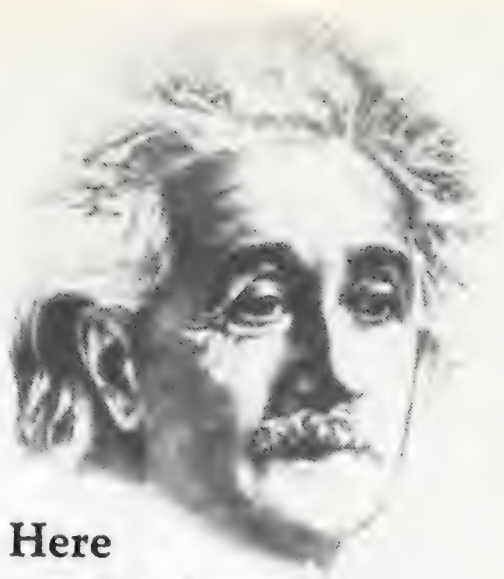
ruined. Some had moved farther west, but many stuck to their farms. Things were changing in the valley. Business picked up, increasing the home market, and markets down the Ohio began to open up.

Over the years the excise, under various names, has crept back and increased. The tax on whiskey is now more than a hundred times what it was when the "whiskey boys" balked at paying it.

In 1830, the original log church on Mingo Creek was replaced by the church that still stands across the road from McFarlane's grave. Bulldozers scraped the last memory of Neville's estate from Bower Hill when an ultramodern hospital was built there a few years ago. Lanes of concrete now replace the mud trails.

Just over the hill from Pittsburgh's downtown skyline, though, in Greentree Borough, is a deep, wooded valley passed over by time and bulldozers alike. Here tiny Whiskey Run still flows through old Whiskey Hollow as it did in that faraway day when the many stills along its banks gave the creek and valley their names. Its source has been altered by developers, and a channel of man-made stone constricts its last mile, where high above traffic roars across on the Penn Lincoln Parkway, but in between are a couple of remote, secretive miles, little changed since Washington's time—except for the hard surface on the narrow road. Here the maze of streets, homes and shopping centers just out of sight over the hills seem far less real than curls of phantom smoke from long-gone stills.

Disgruntled soldiers dragged men from their beds and forced them to run beside mounted troops for several miles.



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Book reviews

The Titanic Effect
Kenneth E. F. Watt
(E. P. Dutton, $7.95; in paperback, Sinauer Associates, $3.95)

The energy shortage is just the beginning, according to this study of existing and impending crises resulting from our growth-oriented society. But perhaps the next crisis can be avoided by recognizing the possibility of disaster.

In dealing with today's problems, writes ecologist Kenneth Watt, "there appears to be a basic human tendency to ignore warnings about such possible enormous disasters as 'unthinkable.'" The good ship *Titanic,* for example, was hailed as unsinkable; accordingly, few safety precautions were taken—such as providing enough lifeboats.

Based on this experience of lack of planning, Watt has devised what he calls the *Titanic* effect: "The magnitude of disasters decreases to the extent that people believe that they are possible, and plan to prevent them, or to minimize their effects."

And how has the United States planned for the *Titanic* effect? Watts points out, as the following cases indicate, that historically we have not planned for the unthinkable:

• The relative lack of public concern about the energy crisis is probably due to the popular belief that an infinite supply of energy has been assured by the discovery of atomic energy. Yet only a small percentage of our energy is generated by nuclear plants; the more prolific breeder reactors are not yet commercial, and it will be a long time before fusion reactors are even developed—if at all.

• Take the food situation, where the global food supply is not keeping pace with increasing demand. The "Green Revolution" was supposed to reverse this situation, but it hasn't: The new strains of wheat and rice require heavy reliance on inputs of expensive technology such as machinery, fertilizer and pesticides—and most of all water.

• When there were recent discussions in Sacramento about enlarging the airport so that it could accommodate 500,000 takeoffs and landings a year instead of the present 13,000, no one seemed to have questioned estimates on growth of air travel. What air officials were talking about was an increase of 38.46 times; however, based on the 1.7 percent per annum growth rate in domestic revenue passenger miles, it would take 211 years to get to this increase in traffic!

The basic problem in dealing with the *Titanic* effect, as Watt sees it, is one of long-term commitment to growth: "Virtually all institutions . . . perceive their best interests to reside in promoting growth, in the economy and in the population as a whole." The deleterious effects of excessive growth, which are discussed in this book, include: shortages of raw materials and food, market saturation, overpopulation, pollution, inflation and the interrelationship between them. Watt writes that there is only one way to postpone this inevitable and runaway growth: Shift the economy away from its obsession with production, and move toward an economy based on provision of services.

This is not just another doomsday book, predicting the worst and offering little hope. On the contrary, Watt forcefully—and without jargon—produces several scenarios and gives positive solutions for coping with their problems. While the author gives broad guidelines for planning for future crises, he does not indicate which groups within the government can best do it; yet it is the shortsighted planning done at official government levels that could potentially ruin us.

Watt invites the readers to try their skills at planning. He presents five games in which they can sharpen up their skills in projecting future trends. One game, for example, asks for a year-by-year forecast of gasoline prices, and a projection of the impact this will have on the amount of bus travel. The questions Watt raises in his games—and throughout

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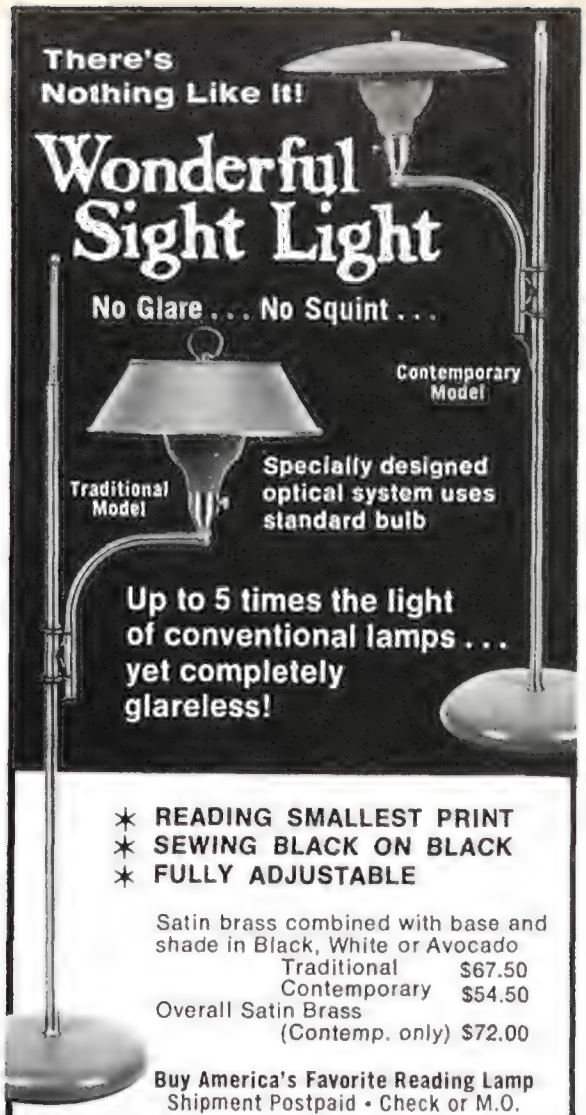

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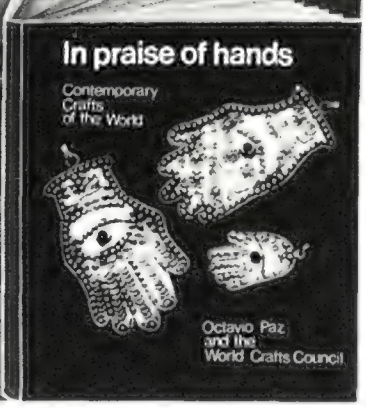

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the book—are penetrating, sobering, and well worth pondering.
—*Jane Stein*
Wrote for SMITHSONIAN on recycling (May), and energy (October 1973).

Audubon in Florida
Kathryn Hall Proby
(University of Miami Press, $12.50)

America's Number One bird watcher went into the Florida wilderness in 1831. For six months he explored the land, traveling on foot, by Indian pony and on horseback, by canoe, skiff, cutter and schooner, following log roads and Indian trails and finding his way across mud flats and swamps.

Most of the materials relating to this rugged chapter in the life of John James Audubon are now brought together for the first time in this well-organized book by Kathryn Hall Proby. Part I of the book contains Mrs. Proby's succinct biography of Audubon, with emphasis on his Florida adventure. In chronicling his expedition, she incorporates generous selections from his colorful letters and journals. Following this, she goes on to tell how she revisited the scenes of Audubon's explorations. Part II of the book is devoted entirely to Audubon's own writings, and mostly to his ornithological biographies of 52 Florida birds. Each bird history is accompanied by the artist's corresponding illustration, newly photographed from the Elephant Folio of his famous *Birds of America*.

Through Mrs. Proby's selections from Audubon's letters and journals, we plunge through mud, sand and mosquitoes, following this dedicated artist in search of birds. An active field day began before first light and ended after sunset. The wildlife seems inexhaustible: A river is described as so thick with fish that it is hard to push the boat through them.

Audubon and his companions collected birds for sport and food as well as to paint. In the Florida Keys he enthusiastically describes shooting numbers of pelicans and cormorants.

On another occasion Audubon and his friends hide among the bushes at the edge of a mud flat where shorebirds are feeding. As the tide rises the birds are pushed within range of the guns and in a very short time the hunters have a pile of birds the size of a "small haycock."

Audubon's ebullient spirit bursts forth

unexpectedly when, after being mired in a salt marsh, he and his companions celebrate getting back to deep water by setting fire to the marsh. They then watch thousands of marsh rabbits run for their lives in front of the blaze.

In retracing Audubon's route, Mrs. Proby began in St. Augustine and worked south. Encountering some of Audubon's problems with mud and mosquitoes, she and her companions found most of the places he describes. Of course, they did not find the same concentrations of wildlife. Her account of turtle-watching typifies the reduction in numbers that many species in this country have undergone in fewer than 150 years. Audubon found sea turtles in the Dry Tortugas, Key West and Cape Sable. Mrs. Proby and her party could only find them on Cape Sable. They watched a turtle deposit eggs that were eaten immediately by a raccoon.

Audubon emerges from Mrs. Proby's selections a tremendously energetic naturalist and woodsman.

—*Helen Hays*
Department of Ornithology, American Museum of Natural History

Children of the Universe
Hoimar von Ditfurth
(Atheneum, $10.95)

Hoimar von Ditfurth is a German professor of psychiatry and neurology with an interest in astronomical journalism. Here he has written a popular book, which has been very successful in Germany, on some recent discoveries in astronomy and their connection with life on Earth. He traces the familiar evolutionary sequence of heavier elements into interstellar space; the incorporation of such heavier elements into subsequent generations of star and planet formation; the origin of life on planets; and the evolution of life, at least on our own planet, to the stage of human intelligence. The author believes that space exploration is an enterprise well worth its cost for the picture it gives us of ourselves and our relation to the universe.

Unfortunately, his book is flawed in a number of details. For example, Von Ditfurth believes that all life on Earth owes its existence to the presence of the moon. He holds that the moon is responsible for the generation of the geomagnetic field, providing a pumping mechanism for the self-sustaining dynamo in the

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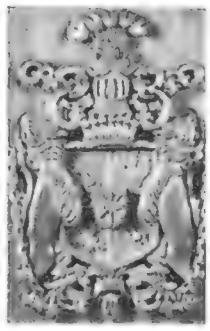

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Earth's core. This is a questionable idea at best; most theories of the geomagnetic field are independent of the moon.

He then calls attention to the polarity reversals of the geomagnetic field which, once every million years or so, leave the Earth with a very small magnetic field strength for some thousand years, thus permitting the solar wind to stream into the Earth's atmosphere instead of being deflected by the geomagnetic field. Here he is on sound footing.

But then he argues that, through the production of radioactive isotopes in the atmosphere, catastrophic biological changes have ensued during field reversal. There is indeed evidence for extinctions of microscopic marine fauna during periods of field reversal, but no sign of fundamental changes in biology as a whole. Indeed, a slight increase in the mutation rate is readily compensated by selection pressure on the mutation process. Organisms on the Earth genetically control their own mutation rate. There is no estimate of the amount of increased radioisotopes during field reversals. Even if the Earth had always been without a magnetic field, there is no reason to think that it would be lifeless.

Among the numerous factual errors are significant underestimates in the number of stars in the Andromeda galaxy; an extremely awkward statement that there are four galaxies lying 24 million miles from the Earth; the description of a galaxy as "an entire world"; a confusion between meteors and meteorites; the belief that the only solution to Olbers' Paradox is that the universe is finite (which is only one of several possible solutions); the claim that Nova Persei was more energetic than the Crab Nebula supernova explosion; a statement, in a time when there are thousands of thermonuclear weapons on the planet, that thermonuclear reactions have never existed on the Earth.

Also, there is Von Ditfurth's belief that there are no devices for detecting neutrinos; a contention that Mars lacks a metallic core; an erroneous conclusion that the infrared "cold spot" observed by *Mariner II* referred to the surface (it referred to the clouds); a claim that DNA is the molecular seat of human memory; the contention that comets of other stars frequently enter our solar system, when there is not a single case known of a comet on hyperbolic orbit; and a serious

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confusion between neutron stars and black holes. And there are a number of translational infelicities, such as "radiant isotopes" for "radioactive isotopes."

The book does have a number of positive features, including some interesting historical references to Immanuel Kant's *Universal Natural History and Theory of the Heavens*. But it has so many errors that it cannot be recommended to a general audience.

—*Carl Sagan*
Astronomer at Cornell University and author of *The Cosmic Connection*

The Burro
Frank Brookshier
(University of Oklahoma Press, $8.95)

Frank Brookshier has set out to give this pack animal its due. He has, if anything, over-succeeded.

According to the author, the burro (also known as the donkey and ass) carried our very civilization, from bricks to the word of God, on its back. Whether carrying the prospector to the Comstock Lode or the Holy Mother and Infant Jesus into Egypt, the donkey did its job (at its own pace to be sure) and in some ways got us where we are today.

A terra-cotta burro from ancient Greece

As a reward for centuries of hard work, the donkey has received little grub, abundant abuse, and precious few words of praise or acts of kindness.

Brookshier is apparently trying to make it up to the entire species (including the hybrid mule) with this book. But

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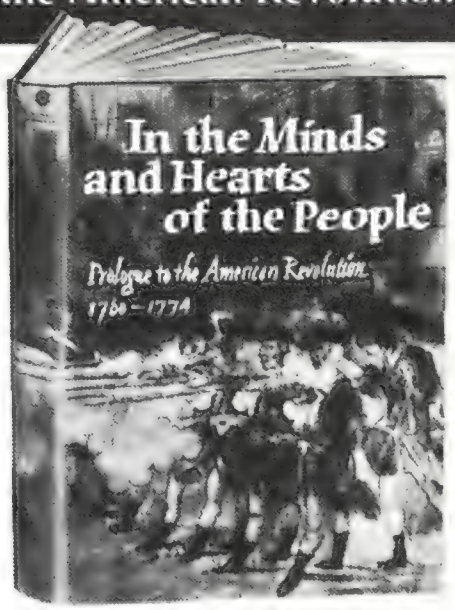

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the reader who hoofs it through the interminable arroyos of *The Burro* will learn what it is to labor mightily for scant forage.

He will find the occasional attractive fact (Damascus was once known as the "City of the Asses"), or Chinese proverb ("A wife can be had for five dollars; an ass costs fifteen"). In between, the reader will be constantly whacked about the conscience for man's inhumanity to the beast. Brookshier, it turns out, was carried to grade school on a burro and has loved them ever since. He now has gone to enormous lengths to trace down every possible bit of burro lore with which to cobble the reader's way.

It seems that every fact, every scene, every incident involving burro, donkey or ass, back to *Eohippus* of the Lower Eocene (and that's 50 million years ago) is trotted out. If the ass was known to be around in an area, from Anatolia to Peru, at any time, Brookshier will list all the produce of that land, down to almost the last fig or thistle, and assure us that the burro patiently carried it all.

Even when there is no evidence that a burro was anywhere around, Brookshier implies that the animal was ignored by the recording secretary—whether Pliny, St. Matthew, Shakespeare or Edgar A. Guest. "In his early years as a carpenter," Brookshier tells us, "Jesus doubtless owned a burro for riding and transporting the tools of his trade."

But there is that occasional leaf of grass for the reader. It is not every day you learn such a word as "onalatry," which, the author says, means ass worship.

For the onalatrous, then, here is the perfect gift.

—Frank Sartwell
Washington free-lance writer

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Smithsonian highlights

National Collection of Fine Arts

"Tribute to Mark Tobey" is a major exhibition honoring the "grand old man" of modern American painting (see p. 56). Seventy paintings, most of them in tempera and many never previously shown in this country, are included in the show. Highlighting the collection is "Sagittarius Red," a 6-by-12-foot, painstakingly detailed canvas that has been declared Tobey's lifetime masterpiece—opens June 7.

"Anne Ryan Collages" is the first major museum exhibition of the works of this late American artist. The 50 collages demonstrate her use of bits of paper, fabric, thread and paint to create cubist designs—through July 14.

Division of Performing Arts

The eighth annual Festival of American Folklife (see p. 6) will be held on the Mall July 3-14. Present at this year's festival will be folk groups from Africa, Scandinavia, Southern Europe and India demonstrating, through music, dance and food, the cultural bonds between ethnic groups in America. The themes of "Working Americans" and "Regional Americans," with Mississippi as the featured state, will also be represented among the exhibit areas, workshops, fiddle contests, craft demonstrations and concerts. Additional information will appear in July Smithsonian highlights.

"Theater Chamber Players" presents the premiere performance of John Graziano's *Chamber Concerto*. Included on the program is Maurice Ravel's *Histoires Naturelles*—June 10, 8:30 P.M., Baird Auditorium, Museum of Natural History.

National Portrait Gallery

The first major Smithsonian Bicentennial exhibition, "In the Minds and the Hearts of the People: Prologue to the American Revolution 1760-1774," documents the turmoil and discontent of the Colonies in the years preceding the Revolution. Of the 65 paintings exhibited, 14 have never been shown in America. Eighteen detailed Georgian settings of furniture and decorative items serve as display rooms for the art. Especially noteworthy in the collection are four paintings by Sir Joshua Reynolds, eight by Charles Willson Peale, ten by John Singleton Copley and Allan Ramsay's full-length portrait of George III in his coronation robes. Important documents, maps and cartoons help re-create the story of the turbulent pre-Revolutionary years—opens June 14.

The first American showing of *George III* by 18th-century artist Allan Ramsay.

Renwick Gallery

"200 Years of Royal Copenhagen Porcelain" is a choice selection of 137 porcelain, stoneware and faience works from the historical and contemporary collections of the Royal Copenhagen Porcelain Manufactory, Ltd. Beginning with items from the factory's first years, the show includes the 19th-century designs of Arnold Krog and 20th-century works by Patrick Nordstrom, Carl Halier, Anne Marie Trolle and Bodil Buch—through June 30.

Report for Associates
The latest volume of a new quarterly publication, the "Smithsonian Institution Research Reports," discusses studies ranging from the spectacular bird migrations in Central and South America to archaeological studies in Brazil. For a free copy, write Associates' Reception Center, Smithsonian Institution, Washington, D.C. 20560.

Museum of History and Technology
"California, The Golden Quest," located in the "Hall of Everyday Life in the American Past," features new exhibit cases on California's Gold Rush days. Included in the exhibit are the tiny nugget found at Sutter's Mill that triggered the prospecting race from six continents, newspaper accounts fanning the gold fever, and assorted trappings of miners from sifting pans to gold-weighing scales.

National Air and Space Museum, Arts and Industries Building
"The Douglas World Cruiser" is a continuing exhibition celebrating the 50th anniversary of the first round-the-world flight. The newly restored *Chicago,* one of two airplanes that completed the six-month mission, is featured in the exhibit.

Museum of Natural History
"It All Depends" is a major exhibit on ecology, dramatizing how all living elements in an environment are dependent upon each other for survival. Basic ecological concepts are conveyed through the use of dioramas, films, slides and graphic displays. Included are a tidal pool, desert niche and, at the center of the exhibit, a realistic, 34-foot-high tropical rain forest which gives the illusion of extending beyond sight into infinity.

Puppet Theater, Arts and Industries Building
"What If?" is a puppet space fantasy presented by Allan Stevens & Company. For summer schedules and ticket information, call (202) 381-5395. Children under three not admitted.

Anacostia Neighborhood Museum
"Children's Art Exhibit" features creative works from public schools in the District of Columbia. More than 100 items by children of all ages are being exhibited through July 12.

Traveling Exhibition Service
There are up to 70 different Smithsonian-sponsored exhibitions on display each month throughout the United States and Canada. For a complete listing and information on how to bring an exhibit to your area, write: Traveling Exhibition Service, Smithsonian Institution, Washington, D.C. 20560.

- Little Rock, Arkansas—"Kurt Kranz: Bauhaus & Today" (Arkansas Art Center, June 15-July 14).
- Elmira, New York—"Makonde Sculpture" (Arnot Art Museum, June 8-July 7).
- Valley City, North Dakota—"Eighth Dulin National Print & Drawing Competition" (Valley City State College, June 22-July 21).
- Flint, Michigan—"The Phenomenon of Peter Max (II)" (General Motors Institute, June 1-30).
- Austin, Texas—"American Coverlets" (Laguna Gloria Art Museum, June 15-July 14).
- Troy, Ohio—"German Posters of Today" (Public Library, June 8-July 7).
- St. Petersburg, Florida—"American Pieced Quilts" (Museum of Fine Arts, June 15-July 14).

Smithsonian Commons
Located in the original Smithsonian "castle" building, the Commons offers a buffet luncheon and salad bar from 11:30 A.M. to 2 P.M. ranging from $1.60 to $2.25. Also available are coffee and pastries from 10 to 11 A.M. An Associates' card is required. Members may experience a delay in seating during the Washington tourist season. Open Monday to Friday.

Associates' Events
Join a day-long tour of historic Pioneer Tunnel in Ashland, Pennsylvania. Led by miner-guides, the trip includes a ride on the "Henry Clay," an authentic narrow-gauge steam locomotive that travels around the side of Mahoney Mountain—June 27. Call (202) 381-5157.

Parking on the Mall
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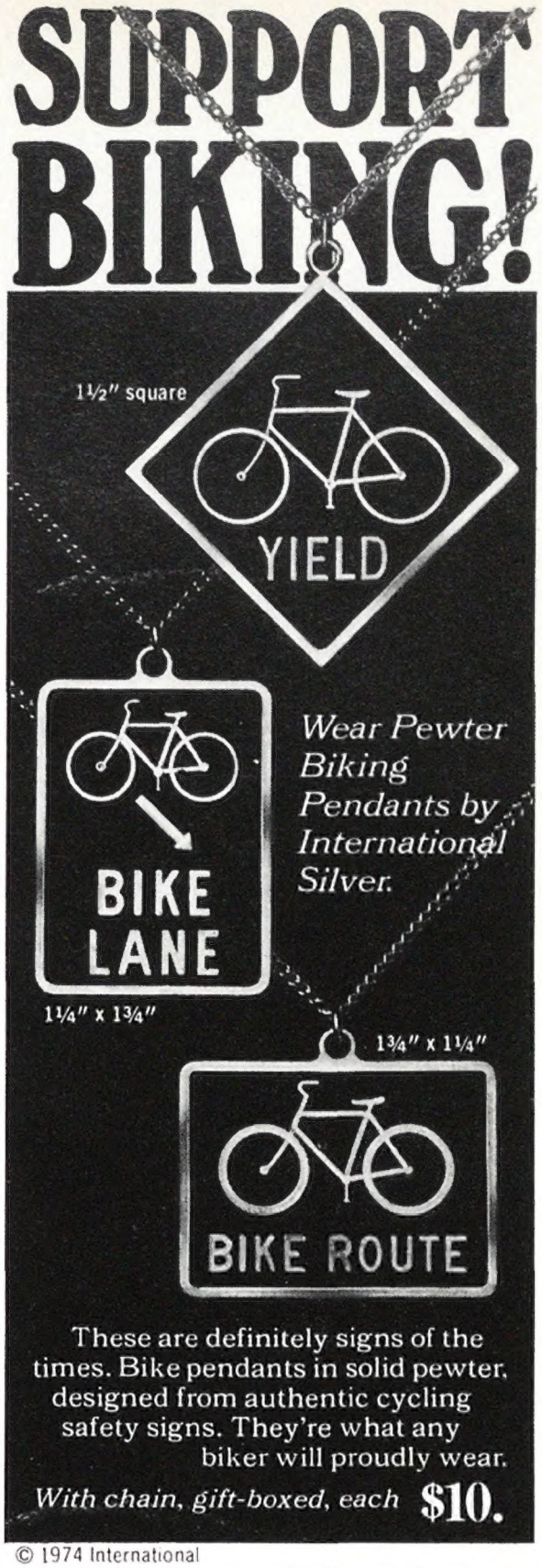
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By Patrick Ryan

Rev up the jeeps, let's hear the music!

Should there be a sudden rash of apoplexy among retired army bandmasters, it will likely have been caused by a recent newspaper picture of a Japanese military band "marching" past in motorcars. It headed an article telling how the Japanese Army has changed from rigid discipline to a "holiday-camp" atmosphere, exemplified by the melodious easy riders. The Japanese on parade play Sousa and Sousa-type music, so it might be well if someone checked the grave of John Philip for signs of upheaval. I little dreamed that I would ever behold a jeep bearing two tuba players in back and a glockenspiel banger beside the driver. And going on before, a vehicle with a big bass drum mounted in the right front seat and its beater standing behind.

A comparable shock had not been met since a few years back when the U.S. First Army band withdrew from marching in an Armistice Day Parade up New York's Fifth Avenue because it was raining. "The rain would have spoiled our instruments, particularly the woodwinds," explained a member of the band defensively. They all drove off before the march got under way, leaving the music to be provided by the Holy Name parish band, composed of 50 youngsters, some only seven years old.

A further puzzlement is raised by motorized bands: Just who or what is supposed to be keeping time to their tempo? Everybody else in the parade must be mechanically transported to keep up with the music, so perhaps they're beating out a rhythm to help the pistons move in unison.

The use of music by the military has ancient origins and was first employed to encourage one's own troops, dismay the enemy, and transmit orders across the battlefield. Perhaps the earliest recorded and most effective display of encouragement was provided by Joshua at the siege of Jericho, when on the seventh day seven priests led by armed men circled seven times around the city sounding seven trumpets, at the last blast of which, and aided by a mighty shout from the army and the people, the walls came tumbling down. The bagpipers of Scottish regiments are a prime example of the use of wind instruments to dismay the opposition.

In medieval combat, commands were traditionally communicated to the cavalry by the sound of trumpets, to the infantry by the beating of drums. But today, when everyone goes motoring into battle, there seems precious little "stepping together" going on among our men-at-arms. In fact, if soldiers no longer go marching by, is there any justification for the employment of 76 trombones to lead them on the way? Martial music played on tape cassettes would seem more appropriate as the signature tunes of computer-wielding warriors conducting battles from subterranean bunkers.

As technology has replaced gallantry, the end may be at hand for traditional foot-slogging ballads. For example, the Famous 58th Defoliation Division (nicknamed the Deathfinger Boys), who wage war with herbicides, would seem to identify better with a musical setting of suitably desolate extracts from Eliot's "The Waste Land." The Corps of Guided Missile Controllers could be melodiously remembered by: "I shot a Minuteman into the air, It fell to earth, I knew not where." The Remotely Controlled Tank Regiment's human directors might find a sense of unity in the updated hymn, "Onward, Inanimate Soldiers," arranged by Stockhausen for free will and musical saw. The Satellite Observer Corps could both court charming simplicity and epitomize their duties in verse and chorus of "Twinkle, twinkle, little star, How I wonder whose you are." And as a general anthem for all forces engaged in nuclear warfare—the *Lili Marlene* of the final World War—the ultimate outcome of their gallant endeavors could best be represented by renditions of John Cage's opus *4 Minutes 33 seconds,* which consists of just that period of dead, empty silence.

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PIERRE FRANÇOIS PASCAL GUERLAIN-1860

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